THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · Railway Official Gazette

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1
Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (12 lines)

Branch Offices:
GLASGOW: 87, UNION STREET
Telephone: Central 4646
NEWCASTLE-ON-TYNE: 4, ROYAL ARCADE, PILGRIM STREET
Telephone: Newcastle-on-Tyne 22239
MANCHESTER: CENTURY HOUSE, ST. PETER'S SQUARE
Telephone: Central 3101
BIRMINGHAM: 81, EDMUND STREET
Telephone: Central 3049

Annual subscription payable in advance and postage free
British Isles and Abroad .....£2 5s. 0d.
Single Copies .....One Shilling
Registered at the General Post Office, London, as a Newspaper

VOL. 91 NO. 7 FRIDAY, AUGUST 12, 1949

CONTENTS

	PAGE
Editorial Notes	173
Poor Half-Year in U.S.A. and Canada	175
Railway Wagon Loads	175
Selling Transport	177
Letters to the Editor	178
The Scrap Heap	180
Overseas Railway Affairs	181
A New British Gas Turbine	184
Remote Supervisory Control for London Transport N.E. Extension	187
Personal	191
Great Northern Railway (Ireland)	193
British Transport Commission Statistics	194
Staff & Labour Matters	197
Notes and News	198

INDEX

An index to the ninetieth volume of THE RAILWAY GAZETTE *covering the issues from January 7 to June 24, 1949, has been prepared, and is now available free of charge on application to the publisher.*

RAILWAY INSPECTION
A brief yet ample account of the legislation evolved to ensure the safety of the travelling public
24 pages Octavo in paper cover
PRICE ONE SHILLING

RAILWAY ACCIDENTS
Legislation and Statistics
1825—1924
54 pages Foolscap Folio in paper cover
PRICE FIVE SHILLINGS

THE RAILWAY GAZETTE
33, TOTHILL STREET, WESTMINSTER, S.W.1.

British Railway Fares

POSSIBLY because of recent action by the Government in seeking reductions in retail prices, there were reports early this week that British Railways were to consider cuts in passenger fares. Perhaps the authors of these reports had overlooked the announcement by the Minister of Transport, referred to in our last week's issue, that he had extended for a further two years the time within which the British Transport Commission is required to bring forward its charges schemes. So far from any early decision on fares being likely, therefore, the prospect has been postponed. The renewed policy of the reintroduction of special cheap facilities is likely to continue, of course, but the general level of charges is dependent on the schemes which, in due time, will be brought forward by the Commission for submission to the Transport Tribunal. The Commission was quick to deny any likelihood of an early reduction in railway fares, and pointed out that the problem of rates and charges has been subject to a great deal of preliminary discussion, but that no decision on any scheme has been made. It added that there was no foundation for the suggestion that plans for reducing fares by 5 to 10 per cent. were being discussed. The Railway Executive, in due course, will review the effects of the various excursion and other special fares which have been introduced this summer. There is, however, a great difference between a general review of railway fares and a consideration of the results and desirability of a group of special concession rates.

* * * *

British Locomotive Exports

The British locomotive industry has had a long and varied experience of export markets. Because of the practice of the British railways over many years of building the great majority of locomotives used in their own systems, the private builders have had to depend very largely on orders from abroad. They have developed close contacts with all the principal overseas countries which offer a market for their products, and go to some pains to foster good relations with them. It was unfortunate, therefore, that, without checking the accuracy of its statement, a national newspaper last week reported that "railway engines built here for China are to be switched to British railways in view of the Far East situation." This report was immediately denied by Mr. John W. Vaughan, Director of the Locomotive Manufacturers' Association of Great Britain, who pointed out that at present British locomotive manufacturers had no orders from China. At the same time, they looked on that country as a great potential customer. Any orders from Chinese railway authorities would be welcomed. The implication in the report that Great Britain is not prepared to take risks in politically unstable areas of the world has been resented by British locomotive builders, who at the moment are fulfilling £30,000,000 worth of orders from a wide variety of countries. Long before it became a national necessity, the locomotive builders were engaged in a constant export drive.

* * * *

Tees-side Steel Project

Despite the risk of nationalisation in the near future, the firm of Dorman, Long & Co. Ltd., Middlesbrough, has decided to proceed at once with the second stage of its development scheme, involving an expenditure of £8,000,000. The first part of the plan, to which reference was made in our issue of September 20, 1946, was the installation of central ore unloading plant at the Cleveland works and the construction of a private railway line about three miles in length linking the Cleveland and Redcar works, projects which have now been completed at a cost of £2¼ million. The second stage of this ambitious scheme, which is part of the national development plan for the steel industry, provides for the building of open hearth steel plant at Lackenby, with a capacity of 10,000 tons of ingots a week, an extension of the ore grading plant at Cleveland already referred to, and the installation of new blast furnace ancillary plant, the whole of which work it is hoped to complete by the autumn of 1952. It is estimated that something like 60 per cent. of the work will be undertaken by the engineering departments of Dorman, Long & Co. Ltd. and its subsidiaries.

Monthly Steel Output Figures

Latest figures of iron and steel production issued by the British Iron & Steel Federation again show the healthy position of the steel industry. For July there was, naturally, an expected slowing down in production brought about by the normal holidays in the steel industry, but in spite of this seasonal curtailment of output, the production of steel for July this year was at an annual rate of 12,695,000 tons, as compared with an annual rate of 12,084,000 tons for the same month a year ago. Steel production in Great Britain for the first seven months of the current year has exceeded the previous record levels reached in the same period last year by 431,000 tons. Steel output for the first and second quarters of this year were at an annual rate of 15,850,000 tons and 15,944,000 tons respectively and there is good reason to hope that the official target of 15,250,000 to 15,500,000 tons set for 1949 will be reached. Pig iron production for July was at an annual rate of 9,224,000 tons, which compares with 8,908,000 tons in July, 1948.

* * * *

Road Haulage Negotiating Machinery

An agreement dated July 28, 1949, has been signed between the Road Haulage Executive and the trade unions representing its staff. The agreement, the signatories to which are given elsewhere in this issue, provides that a National Staff Council shall be established, not later than October 1, 1949, and that there shall be three National Joint Negotiating Committees, one for the operating and ancillary grades, another for the maintenance and repair grades, and the third for the administrative, professional, technical, supervisory, and clerical grades. It is also provided that, on or before January 1, 1950, divisional joint committees shall be set up for each of the divisions of the Executive, and that within six months of that date local joint committees shall be set up. If the National Staff Council or any of the committees are unable to determine any matter falling within the scope of their functions, they shall, at the request of a majority of either the Executive or the union representatives, refer the difference for consideration to the Industrial Court or to any other agreed tribunal for arbitration, and any decision shall be binding on the Executive and the unions.

* * * *

The Way the Money Goes

The Canadian National Railways have had the happy idea of bringing out a series of "Cameos," attractive little folders intended to bring home to their patrons the activities, achievements, and difficulties of their great organisation. The latest —rather ruefully entitled "Oh, How the Money Rolls Out!"— gives an idea of the great cost of construction and maintenance. The C.N.R. total 24,178 miles of line, and every mile of it costs $23,770 in rails, sleepers, and spikes alone. Of this total the 100-lb. rails alone account for $13,550 for a mile of single track. The "Continental Limited," operating daily between Montreal and Vancouver and between Toronto and Vancouver, costs $1,481,800 for the locomotive and nine coaches, and sixteen such trains are needed to maintain this daily service. Thus, to keep only one service going, ties up at least $23,708,800 in motive power and rolling stock. Even the wire fencing alongside parts of the line runs up a sum of $2,200 a mile, and the Canadian National Railways telegraph system with its wire and 36 poles to the mile adds another $800.

* * * *

Streamline Trains in the United States

Statistics given in the June issue of our associated journal *Diesel Railway Traction* afford striking evidence of the extent of streamline passenger enterprise in the United States. By the end of 1948, there were no fewer than 253 trains of this description operating on American railways, covering between them 176,718 miles daily on routes taking them from one end of the country to the other. Combined with luxurious lightweight stock, diesel-electric locomotives, with their reliability and capacity for high sustained speed, have proved a major factor in the success of these streamline trains, many of which are filled to capacity and in some cases are earning up to $7 a mile. About 85 per cent. of the trains are worked by diesel power. On many routes, times have been cut to such an extent that journeys which formerly made overnight travel inevitable, and with it required first class fare and a Pullman supplement if the passenger desired sleeping accommodation, are now completed between one night and the next, in trains composed of reclining-chair cars which command no more than the equivalent of third class fare, so that the passenger gains considerably in time as well as in pocket. The result of this enterprise has been, not merely to arrest the decline in passenger revenues on many routes, but also to create traffic. Some of the American streamline trains, indeed, have paid for their construction by the profits from no more than a single year of working.

* * * *

Speedier Remote Control of Power Circuits

In the present state of development of remote supervisory control systems, it is to some extent in the direction of simplifying the operators' duties that speedier working must be sought. The apparatus adopted for the London Transport Central Line extension to Loughton and Hainault, described elsewhere this week, eliminates some of the manipulation often required, and provides improved methods both of indicating faults and confirming the operation of switchgear. From these points of view an important element is the key switch with a signal lamp in the handle. One movement of the key selects and operates the circuit-breaker concerned, whereupon the lamp in the handle glows steadily to show that the control functions have been completed. The lamp goes out when the key is released, but subsequently gives warning of a change in the condition of the circuit-breaker by flashing. This simplified procedure, which may be compared with the operation of individual "select" and "operate" keys, and the repeating of switchgear movements on separate pilot lamps, has contributed materially to reducing to two seconds the time required for restoring a circuit-breaker. The new Central Line apparatus, evolved by London Transport and G.E.C. engineers working in close liaison, will permit considerable cumulative savings of time when many circuit-breakers have to be restored after a power failure.

* * * *

New Signalling at Liverpool Lime Street

The approach to Lime Street Station, Liverpool, through tunnel on a down grade, mostly at 1 in 93, for some 1½ miles from Edge Hill, in rock formation, and the confined situation of the platform lines, have combined to make it a difficult place to work. The traffic had been increasing for some time before the war and re-modelling was considered to be essential. This could not be effected without using the site occupied by the signal box, chosen in the days when it was necessary to see over all the lines, points, etc., where local movements could take place. The equipment in any case required replacement, and a power installation was, therefore, decided on. Although other arrangements were considered, the choice fell on a power frame, with special electric selection methods for reducing the number of levers, which is 95. Train starting indicators and back indicators have also been provided on certain of the departure signals, and, as track circuiting has been installed through to Edge Hill, block working has been abolished, describers now covering the regulation of the train movements. We shall be describing this interesting work in some detail in a later issue.

* * * *

India's Locomotive-Building Project

As is now generally known, the Indian railways are to have their own locomotive-building plant at Mihijam, on the East Indian main line, 17 miles from the important centre, Asansol. The site selected appears to be very suitable, as it is within ten miles of the nearest coalfield, and six from the new dam across the Barakar River, which is to be completed in about two years' time. The reservoir formed by the dam will provide abundant water and hydro-electric power with short transmission lines. The iron and steel industrial area is also near at hand. As 3,000 acres of land have been acquired for the workshops, stores, offices, training school, and for the large town that will be required, there is ample space for future ex-

pansion. Initially the shops and stores will cover about 200 acres, and an annual output of 120 new locomotives and 50 replacement boilers is scheduled. Production of standard locomotive parts is expected to begin next year, and the first complete locomotive is planned to be turned out in 1951 or early in 1952. The new colony is to be known as Chittaranjan and the estimated initial cost of the whole project, including staff quarters, is just over £10,000,000.

* * * *

Poor Half-Year in U.S.A. and Canada

ON March 4 we drew attention to the decrease in wagon loadings on the U.S.A. railways, and further articles on April 1, May 6 and June 24 showed that the railway position was weakening through some decline in general business activity. Particulars of wagon loadings for the first half of the year, received by the last mail, reveal a decrease of 2,092,000, or 10 per cent., below 1948, and 2,875,000, or 13 per cent., under 1947.

Until June, grain, ore and coke passed in larger volume than in 1948, but the forwarding of these commodities then slackened. Coal, forest products, and livestock were down by 12 per cent. or more, while week after week less-than-wagon-load traffic was 14 or 15 per cent. below last year's level and over 20 per cent. beneath 1947. The railways have lost a lot of "smalls" to road, water and air competitors, but the fall in full wagon-load traffic, and especially in coal forwardings, indicates a serious set-back in American prosperity, despite President Truman's reassuring statements to his people. The second half of the year started inauspiciously with a week's loading of only 595,000 wagons, 160,000, or 21 per cent., less than the number dispatched in the first week of July, 1948.

The Canadian railways also had a difficult half-year. The Dominion Bureau of Statistics records the number of wagons loaded as 1,876,000, a decrease of 3 per cent. from 1948. The number of wagons received from connecting railways was 819,000, compared with 918,000 last year—a drop of 10 per cent. The last figure is significant as Canada takes over 80 per cent. of her imports from the U.S.A. Assuredly these statistics do not support the idea, prevalent in Whitehall, that the Dominion offers a ready market for British exports.

* * * *

Railway Wagon Loads

THE arguments for and against increasing the size of wagons in use on British railways provide a subject of perennial controversy. Theoretically, a good case can be made for the large-capacity wagon. In many countries, 20-ton, 40-ton, and even much larger, wagons are commonplace. Mr. E. R. B. Roberts, a letter from whom was published in our last week's issue, is a constant and fervent advocate of the 20- and 40-ton wagon for this country. In the past, there have been advocates of large-capacity wagons within the ranks of British railways, and they are not extinct at the present time. The fact that greater use is not made in this country of large-capacity wagons is not the fault of the British railway authorities, but is the result of long-standing customs on the part of consignors on the one hand, and on the other of the terminal facilities provided at works, collieries, and so forth, coupled with a reluctance to incur expenditure on their improvement.

In 1929, the then London Midland & Scottish Railway provided thirty 40-ton self-discharging wagons for the conveyance of coal in full trains to the company's Stonebridge Park generating station. This was done as an experiment, with a view to securing working data to determine the practical and financial economy which would accrue from the use of such vehicles. At the annual meeting of the L.M.S.R., in February, 1930, Lord Stamp stated that the vehicles, which were in service from Derbyshire Collieries, had proved advantageous both from a working and unloading standpoint. Three trains, conveying 400 tons of fuel with a gross weight of 580 tons, were run weekly, and the round trip, colliery to colliery, occupied only about 36 hours.

The experiment was continued, and at the next annual meeting it was stated that during the period the arrangement had been in operation the savings in capital working and handling costs were illustrated by the fact that 6,000 10/12-ton wagon-journeys would have been required to convey the same tonnage as against 1,671 40-ton wagon-journeys actually made.

In an endeavour to induce industry to make greater use of high-capacity wagons, a scheme was approved and announced by the Minister of Transport under which Treasury assistance would be afforded for the carrying out of alterations for terminal facilities at the collieries and works. The G.W.R. was another company which endeavoured to popularise the use of large-capacity wagons for coal traffic.

In general, however, it has been found that for merchandise traffic, the great bulk of which passes in relatively small quantities requiring a quick daily service, there is practically no demand for the larger capacity wagons. During the war the standard 12-ton wagon was up-graded to 16 tons, but there seems relatively little likelihood of any substantial advance on this figure in the present circumstances. The railways are well aware of both the theoretical and practical advantages which might be expected to result from a general adoption of high-capacity wagons, but the final word rests not with the railways, but with the traders.

* * * *

Tanganyika Railways & Ports Services

THE report of the Tanganyika Railways & Ports Services for the year ended December 31, 1947, covers the last complete year of their independent existence, and also the earlier stages of the groundnuts scheme. Two areas on, or near, the Central Line were selected by the Ministry of Food and the Managing Agency for development, namely, the Kongwa area, about 250 miles west of Dar-es-Salaam, and the Urambo area, nearly 600 miles west of the coast on the line from Tabora to Kigoma on Lake Tanganyika. The main effort was made in the Kongwa area, where a branch 17 miles long was opened from Msagali to Kongwa in October, 1947; since the preceding March, freight had been conveyed by rail to adjacent main-line stations, and to points on the branch as construction proceeded. During 1947, over 18,000 tons went by rail to the Kongwa area, mainly from Dar-es-Salaam, and included in this traffic were 291 heavy tractors, nearly all out-of-gauge loads and requiring special working arrangements. The development of the Urambo area began late in the year. At the end of 1947 there was little traffic for the scheme awaiting rail haulage.

As soon as H.M. Government proposed the cultivation of oil seeds in the Southern Province, the railway management decided to build a line westwards from Lindi Creek, which lies some 50 miles up the coast from the then undeveloped port of Mikindani. The limitations of Lindi as a port were recognised, and when, early in 1947, it was decided to develop Mto Mwara, forming part of the port of Mikindani, the first 12 miles of the line from Lindi were constructed as a temporary line as far as Ruo on a permanent alignment from Mikindani westwards. Survey work began in May and the first earthwork contracts had been let by the last quarter of 1947.

The following are the more important results:—

	1946	1947
Railways		
Train-mileage	1,181,550	1,236,942
Passenger journeys	1,526,101	1,397,071
Goods ton-miles	98,005,730	108,724,399
	£	£
Coaching receipts	358,649	318,431
Goods receipts	776,473	985,518
Total railway receipts	1,169,307	1,335,886
Working expenses	650,255	700,240
Steamships	£	£
Receipts	11,141	12,879
Working expenses	8,936	9,561

During the year under review the motive power situation had improved. Shortage of materials and spare parts had rendered difficult the maintenance of coaching and goods stock. The latter included a number of metre-gauge wagons lying in the Suez Canal Zone and in Iraq, which had been purchased as surplus stores from the Middle East military authorities, and, though mostly in need of repairs, would do much to tide over the wagon shortage. Road services were considerably augmented.

As recorded in our previous issues, the amalgamation of the Tanganyika Railways & Ports Services with the Kenya & Uganda Railways & Harbours took effect on May 1, 1948, the combined system being known as the East African Railways & Harbours Administration.

The Austrian Railways Since the War

UNLIKE their position during the lifetime of the first Austrian Republic, the Austrian State Railways today are not autonomous. In accordance with the provisions of the Austrian Transition Law of June 20, 1945, they depend on the Austrian Federal Administration, and will continue to do so as long as the country remains under the occupation of foreign powers, and as long as such problems as the ownership of locomotives or rolling stock remain unsolved.

Wartime wreckage and destruction include 381 bridges, 262 signalling installations, 97 water plants, 44 turntables, buildings and other structures in masonry (bridges excepted) totalling 180,116,700 cu. ft. and various lines aggregating 1,557 route-miles. Reconstruction has made satisfactory progress, and the rebuilding, temporary or permanent, of 359 bridges together with repairs to damaged lines has enabled traffic to be resumed on the whole of the above-mentioned mileage except for 30½ miles. There are still numerous sections which have not been restored to pre-war standard and on which severe speed restrictions are in force.

Annual renewals should cover some 125 miles of track comprising 300 points and 1,200,000 wooden sleepers, but lack of materials prevents the programme from being fulfilled. In 1948, for instance, only 90,000 new sleepers were available, and there were several cases in which sections of the second track on main lines had to be dismantled temporarily to obtain urgently needed sleepers and rails for overtaxed goods and marshalling yards.

The railways are suffering from a permanent traffic crisis which must be traced back to the shortage of steam locomotives and goods wagons. By the end of 1947, the Austrian State Railways had 2,659 steam locomotives, 297 electric locomotives and other electric power vehicles, 6,045 coaches, and 53,586 goods wagons; 150 steam locomotives were reserved for the requirements of the occupation powers. Only 54 per cent. of the steam locomotives, only 68 per cent. of the coaching stock, and only 76 per cent. of the goods rolling stock were serviceable. Moreover a high proportion of the non-serviceable stock was beyond repair. According to a survey made by the Vienna Economic Research Institute, locomotives in service on the Austrian railway system averaged 1,500 in January, 1949, including 300 electric power vehicles.

The position of the goods rolling stock was first consolidated at the end of March, 1947, when the Allied Council allocated provisionally 25,000 goods wagons to the State Railways, a total which has been diminishing since then. Austrian wagons have to be used for export traffic, and the general complaint is that they are kept outside the Austrian frontiers for excessive periods, and wagons in considerable numbers have not found their way back from eastern European countries. The international agreement, in which the Austrian State Railways are a partner, for the reciprocal use of wagons in the international traffic has been in force from April, 1948, only. The goods traffic between Austria and other countries is stated to involve a turnround of wagons which at present is some 50 per cent. longer than a year ago. For home traffic the turnround is twice as long as before. Rationalisation and a better all-round organisation enabled the average number of wagons placed at the disposal of consignors to be considerably increased from 1,451 wagons a day in January, 1947, to 3,269 wagons a day in September, 1947, and 4,386 wagons a day in September, 1948. Nevertheless, the last-named total was about 2,000 wagons short of requirements. A handicap is the number of goods wagons required by the occupation powers amounting to about 10 per cent. of the total of serviceable goods wagons.

In view of the rapidly increasing goods traffic, a development which has assumed notable proportions as a result of the Marshall Plan, endeavours are being made to improve the goods traffic first by reducing the turnround of wagons, and, secondly, by going ahead with the building programme covering 16,000 goods wagons.

The grave shortage of coal has been responsible for the comparatively light density of the goods traffic as expressed in train-km. contrasting with the actual performance as expressed in *tonne*-km. Long and heavy goods trains have to be worked on the steam-operated lines. The situation is better on the electrified lines. The tables below reflect the development of the passenger and goods traffic in 1946 and 1947, and partly for 1948, and comparative figures are shown for 1937, the last year before the "incorporation" of the then Austrian Federal Railways into the German Reichsbahn.

	Passenger traffic	Goods traffic	Total traffic
		Million train-km.	
1937	34·9	19·9	54·8
1946	15·7	12·2	27·9
1947	13·2	15·1	28·3
		Million *tonne*-km.	
1937	432	4,107	4,539
1946	478	2,864	3,342
1947	417	4,392	4,809
Jan. to Nov., 1948 ...	528	5,445	5,973

Much of the expansion has been because of the increase in the transit traffic, particularly welcome because this constitutes an important source of much-required foreign currencies. Main currents in this connection are the traffic between Czechoslovakia and Poland on the one hand, and Italy on the other, and, since the summer of 1948, the traffic between Trieste and the American zone in Germany *via* Salzburg. The Marshall Plan has brought also a notable increase in the traffic between Trieste and Austria itself.

The budget for 1949 envisages a working expenditure of Austrian schilling 1,495,600,000 and working receipts totalling sch. 1,336,300,000 (traffic tax excluded). Hence, a working deficit of sch. 159,300,000. The expenditure has been affected adversely by wages and salaries totalling sch. 981,000,000, despite the fact that the staff has been reduced by about half as compared with the totals obtaining during the "Anschluss years."

The working deficit in 1946 was sch. 169,000,000, and in 1947 sch. 293,000,000; it was sch. 345,000,000 for the first eleven months of 1948, despite the fact that goods receipts showed an appreciable increase to sch. 621,700,000 (58½ per cent. of the total working receipts) for the same period.

The following particulars illustrate the financial situation:

	Austrian Schilling (million)		
	Receipts	Expenditure	Reconstruction expenditure
1946	433	602	134
1947	771	1,064	220
1948 (*a*)	1,063	1,408	276
1948 (*b*)	1,161	1,276	390

(*a*) January to November inclusive
(*b*) Budget figures for the whole year

The budget for 1949 envisages an expenditure of sch. 610 million in respect of railway investments inclusive of sch. 158 million for electrification. Electrification absorbed sch. 74 million during the six months ended November 30, 1948. One thousand coal wagons and a number of lightweight six-wheel third-class coaches have been ordered.

The acute coal shortage between September, 1946, and January, 1947, was responsible for the contraction of the goods traffic, as expressed in train-km., from 67 per cent. of the pre-war total obtaining in September, 1946, to 34 per cent. The passenger traffic regressed at the same time from 56 per cent. to 12 per cent. This was the state of affairs in the British and Russian zones, but conditions were better in the French zone and in the western part of the American zones where the main lines are electrified. Because of the bad quality of the coal received, in addition to the poor state of repair and overage of the locomotives, the consumption of coal has increased from 255·2 lb. a km. to 347·6 lb. The effects of the Marshall plan brought an improvement. In 1947, the consumption of coal amounted to 878,200 *tonnes* (78 per cent. of the annual average before the Anschluss).

In addition to the general management in Vienna there are four regional managements, at Vienna, Linz, Villach, and Innsbruck, each covering approximately one of the four zones of occupation. The Villach regional management (British zone), however, has also jurisdiction over the 21-mile Böckstein—Schwarzach-St. Veit section of the Villach-Salzburg main line, although that section is in the American zone. The Allied Council in Vienna is the supreme authority directing railway matters in Austria. Although it proved powerless in the conflict of views concerning the Russian claims on 540 steam locomotives and 5,575 goods wagons as "war booty" (mentioned in our issues for October 1, and November 12, 1948)

the four Allies were unanimous in June last in authorising the Austrian State Railways to have 954 steam locomotives marked as Austrian property, a concession which had been denied previously. In August last, the Allied Council fixed the total number of steam locomotives which the Austrian State Railways are allowed to own at 1,286. By the end of 1948, steam locomotives in service totalled 1,319, as compared with 1,834 at the end of 1937, while the number of serviceable coaches and goods wagons was 3,527 and 24,798, as against 6,198 and 34,580 at the end of 1937.

* * * *

New British Gas Turbine

THE firm of Ruston & Hornsby Limited, of Lincoln, is to be congratulated on the completion of a prototype gas turbine plant designed with a wide range of applications in view. It is claimed that this is the first British gas turbine to be put on the market which has been designed throughout as a long-life prime mover. The designers have wisely adopted the simple open-cycle form of turbine for their first venture into this field. The provision of a mechanically independent "power" turbine, however, gives a degree of flexibility in operation which will make this plant particularly suitable for locomotive application, and at the same time raises the possibility of direct mechanical drive in place of the heavy and costly electric drive hitherto associated with diesel traction in all but the lowest power ranges.

It might appear that the power output of 1,070 b.h.p. for this unit is rather low for main-line traction, but there are many secondary duties for which a locomotive of this power rating would be well suited. It would also seem possible, in view of their light weight, to include two such units in a single locomotive, particularly if mechanical drive were employed.

A great deal has been written and spoken during the last two or three years about the possibilities of the gas turbine as a prime mover. The trouble, until now, has been the lack of experience regarding reliability, maintenance costs, and ultimate service life. If the gas turbine is to establish itself for railway traction, it must go through a period of intensive trial and development, and it is just this practical experience which so far has been lacking. The appearance of this new turbine plant on the market will go a long way towards meeting this deficiency of running experience. It is encouraging to note that the makers are confident that the service life of the most severely loaded of the turbine blades will be comparable with that now obtained with steam turbine blading.

* * * *

Selling Transport

(From a Correspondent)

A WITTY French critic has taken stock of our Labour Government's handiwork without finding much to admire. Nationalisation, on the pattern adopted in this country, looks to M. Bertrand de Jouvenel* ineffective and illusory—a red herring drawn across the path of social progress. Most of our railway carriages, he remarks, bear the names of the old companies, though some are lettered "British Railways," but the change has not made any difference for either the passengers or the employees. That was written before the Minister of Transport said in May that "the legislative act of nationalising transport is only a preliminary step towards unification and does not in itself accomplish any substantial change. It merely supplies the opportunity to those engaged in the industry to solve their problems." Mr. Barnes, in the same speech, claimed that the advantages of a national scheme of transport would be apparent when road passenger services were co-ordinated with each other and with railway services, and when there was complete integration of railway operation and road goods haulage. He believed that eventually transport would pay its way, if receipts from all types of service were pooled.

If the Minister had been able to point to any perceptible improvement in transport facilities, brought about by nationalisation, he would not have taken refuge in vague general assertions. Since he spoke, he has set up a separate Road Passenger Executive. The new body is fortunate in taking over a branch of work which the great majority of our people like. Road transport sells itself, especially for distances up to 30 or 40 miles. The convenience of interval road services needs no emphasis and road fares are almost the only cheap thing left in these days of rising prices. Whether a bureaucratic organisation will succeed in maintaining the popularity of the S.M.T. company and other concerns taken over by the State is problematical.

The new Executive will be on debatable ground when it comes to review road passenger services in different parts of the country and decide where area schemes are feasible. Some road operators of wide experience doubt whether there is scope for much more inter-working between either road and rail or between separate road undertakings. It seems likely that all road routes, which yield a fair return to bus and coach operators, are served to the satisfaction of the public already. Relettering the vehicles "British Road Services" will not increase the net revenue earned.

After four years of peace, British Railways have failed to restore their pre-war level of performance, save in electrified areas. High-speed trains have disappeared. Express trains, bearing resounding names, rarely attain a start-to-stop speed of 50 m.p.h. One, with perhaps the most familiar name of them all, was timed faster in the year 1900! Many ordinary train schedules are not framed to attract custom, while railway timetables, with their numerous footnotes, are a bugbear to the average traveller. Too often the railway commercial people have on sale little that compares favourably with the facilities offered by the motorcoach owners, who study the wants of their patrons and so secure much traffic which the railways developed originally. There are signs, too, that air transport will compete more keenly in future for internal long-distance travel, as well as for Continental journeys.

Taking these factors into account, and allowing also for the multiplication of motorcars and cycles on the King's highway, there is little prospect of British Railways selling more passenger tickets at a profit until existing train schedules have been overhauled systematically to suit public requirements and speeded up all round. The present impasse cannot be removed by quoting cheap fares and running special excursion trains. The crux of the problem is to swell the amount of net passenger-railway revenue. All we know at present is that a decrease in gross passenger takings goes hand in hand with an increase in working costs. Only the Commission can say whether railway passenger conveyance has reached the same stage as in America, of failing to produce a profit. The sooner we have the facts, the better.

What about selling goods transport? On May 4 Sir Cyril Hurcomb told the National Union of Manufacturers that more and more would the Commission aim "to sell transport as a unified service, offering road and rail services sometimes as alternatives, and sometimes in combination, together with allied facilities where appropriate by waterway and at the docks." In many cases, the Commission hoped, traders would leave it to employ the method which made the best use of the resources available. Laudable as these objectives are, the difficulty will be to achieve them under the existing organisation, which has set up Railway, Road Haulage, and Docks Executives working in watertight compartments. Instead of the "properly integrated system of public inland transport and facilities" contemplated by the Transport Act, 1947, we have disintegration at high pressure.

To sell transport to advantage, the Commission should have in each district of the country one representative who can make decisions covering rail, road, and water conveyance. The railway district organisation covers the whole country and it should be possible to build round it arrangements which would take care of all types of carriage. There should be a summary end to the present policy of the various Executives entrenching their forces and piling up administrative costs so that each of them can act independently. Unless there is a complete change of heart, the Commission's staff will never be brought to look at transport as a whole and to move goods with the object of giving efficient service in the most economical way. "Unified" and "unification" will remain among the most abused words in the language until the existing set-up is replaced by a scheme based on straightforward rulings from one authority

* "Problems of Socialist England," by Bertrand de Jouvenel. London: The Batchworth Press, 20, Tudor Street, E.C.4. Price 12s. 6d.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Electrification in the Netherlands

Netherlands Railways,
Utrecht. July 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With much interest we read your article on the electrification of the Netherlands Railways on page 68 of *The Railway Gazette* of July 15, 1949. However, the situation of the projected electrification as shown on the map published with the article does not agree with the reality.

For your information we give you herewith the sequence of the electrification of our main lines:—

1. Dordrecht–Lage Zwaluwe–Breda–Tilburg–Boxtel, and Lage Zwaluwe–Roosendaal
2. Woerden–Leiden
3. Amersfoort–Deventer–Enschede/Oldenzaal
4. Amersfoort–Zwolle–Groningen/Leeuwarden

The time when the electrification of these lines will be completed cannot be stated yet as they entirely depend on the supply of the necessary materials.

The lines Zwolle-Arnhem, Nijmegen-Roermond, Nijmegen-'s-Hertogenbosch-Tilburg, and Roosendaal-Flushing are not included in our scheme of electrification. The possibilities of electrification of these secondary lines are being studied.

Yours truly,
J. F. E. M. AGHINA
Public Relations Officer

Frog Tampers

Government of Northern Ireland,
Ministry of Commerce,
Transport Division,
Belfast. August 3

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Further to the references in your issues of April 29 and May 13, it may be of interest to record that one of the earlier ½-ton frog tampers was used here in 1938-40, and again in 1948.

During these periods, the writer was in charge of construction of an arterial road, for the Government of Northern Ireland, over areas reclaimed from the sea by tipped city rubbish and pumped estuarine clays and silt. The machine was employed in driving hard rubble into the soft ground, and the condition of the duel concrete carriageways after nearly 10 years use by heavy traffic, indicates that a high degree of compaction had been achieved in the sub-grade.

Yours faithfully,
R. D. DUNCAN

Rubber for Buffing and Drawgear

George Spencer, Moulton & Co. Ltd.,
13/14, Ashley Place,
Westminster, S.W.1. August 2

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—We have heard from our American associates, the Waugh Equipment Company, that they were very interested to see on pages 42, 43 and 44 of *The Railway Gazette* issue dated July 8, the article and illustrations of the new "Broadway Limited" of the Pennsylvania Railroad, and they add that, although it is not mentioned in the article, these trains are equipped with rubber buffing and drawgear.

We need hardly say that we take very great pride in the advance and progress which is being made in the adoption and use of rubber by the up-to-date American railways, since the idea of using rubber for buffing and drawgear emanated from the adoption of rubber by many of the privately-owned British railway companies before nationalisation.

Yours faithfully,
G. E. GODFREY,
Joint Managing Director

Railway Passenger Traffic

Frognal, N.W.3. August 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Plain folk are always glad to catch Homer asleep—especially when he was acting as editor of *The Times* on August 1 and of *The Railway Gazette* on August 5. On these dates the two journals published the British Transport Commission's traffic return for the four-week period to July 17. *The Times* had a sub-heading "Another Big Passenger Increase," and your article said that the passenger receipts of British Railways made by far the best showing All because there was a gain of £1,617,000 for the July period over the previous one and of £108,000, or 0 9 per cent., on July, 1948! Each year passenger receipts in July jump above the June level; in 1948, with indifferent weather, the advance was £1,561,000. The mineral managers take the palm in July, 1949, with plenty of dust to be sure, for an advance of £229,000, or 4.4 per cent., in coal and coke receipts.

Again, the figures of cheap tickets quoted by both journals as for 24 weeks ended June 19 are really for the five months ended May. It is a pity that passenger journey statistics are not compiled on a four-week basis, so that we can compare them with the coaching train-mileage, which was 6 per cent. higher in the May period and 10 per cent. up in June.

As you say, net revenue is what matters. In May the average receipt from a cheap ticket was 16d. and from a monthly return 61d. Both averages may be higher in summer when holidaymakers go on long journeys, but the railways will have to carry a great volume of cheap travel to offset the decline in ordinary and monthly return fare takings. The changeover to popular prices will throw a heavy strain on the limited amount of rolling stock available and, if pushed too hard, may start an easy descent to Avernus.

Yours faithfully,
R. BELL

Locomotive Interchange Trials

British Railways, Western Region,
Swindon, Wilts. August 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I desire to call your attention to one paragraph in the editorial on "Locomotive Interchange Trial Results" on page 117 of your issue of July 29.

It appears that an inaccuracy has crept into the paragraph dealing with the further trials on Western Region using Welsh coal. The latter portion of that paragraph quotes "the average coal consumption using hard Yorkshire coal was about 6½ per cent. less. . . ." This is a reversal of the actual results, and I think that the paragraph should read as follows:—

"The average coal consumption using Welsh coal was about 6½ per cent. less, in lb. per d.b.h p -hr. or 9.2 per cent. in lb. per train-mile. With the "Hall" and "2800" classes the differences were far more marked, the figures being 17.7 and 19.0 per cent. respectively for the former, and 19.2 and 9 per cent. respectively for the latter. These figures make due allowance for the difference in calorific value between the two kinds of coal."

Yours truly,
F. W. HAWKSWORTH
Chief Mechanical Engineer

Railway Standards

"Dale View,"
16, Box Ridge Avenue,
Purley, Surrey. July 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mr. H. C. Casserley in his letter on the above subject in your issue of July 29 does well to draw attention to the great importance of clean locomotives, for the commercial and public relations value of clean and bright locomotives to a railway undertaking cannot be over-emphasised, and it is unfortunate that the conditions arising out of the war have brought about such a marked deterioration in this respect.

Mr. Casserley, however, like many amateur railway enthusiasts, is obviously unaware of the very real difficulties which are involved in maintaining a high standard of cleanliness throughout British Railways locomotive stock. Many persons outside the railway profession seem to imagine that we professionals enjoy a secret and deliberate delight in having all our locomotive stock as dirty as possible, but I can assure them that we are as anxious for the cleanliness of locomotives as they are, not only for appearances' sake but also for maintenance reasons.

Staff difficulties in running sheds are most acute, and the oft-heard cry of "shortage of labour" which admittedly has become in many places a glib excuse for all shortcomings, is with running sheds a very real factor. Were your correspondent to spend a period in a running shed he would realise that often it is only with the greatest difficulty during the holiday rush that firemen can be provided (and of extreme youth at that), let alone cleaners. That cleanliness of locomotives is directly related to staff shortage is proved by the fact that country depots where the staff situation is much easier have a higher percentage of really clean locomotives to their credit than their London counterparts.

I cannot let pass unchallenged Mr. Casserley's statement that clean Southern Region locomotives are confined solely to the top link. Has he not observed the immaculate Drummond M.7 tanks which haul empty stock to and from Waterloo, or the shining stud of locomotives which do such credit to Dover depot?

Societies such as those which Mr. Casserley represents could

make a most useful contribution to the cleanliness of locomotives by encouraging their younger "number-taking" members to take up the Motive Power Department as a career. Given more hands to help, we shall be the first to see that one hundred per cent. of our locomotive stock is as immaculate as it deserves to be and as our customers the public should see it.

Yours faithfully,

R. A. SAVILL

Road Accidents

Eynesbury,
St. Neots. July 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It is surprising that the Government does not order the Railway Executive to reduce rates and fares as a matter of high policy—especially as it promised that, under nationalisation, it would reduce them in the interests of the general public and national economy. Heavy savings would be made in coal, petrol, street and road expenditure, and accidents. The last-mentioned alone are said to be now costing the public £150,000,000 a year in taxation.

Evidently, it does not know that the railways are now carrying some 500,000,000 *fewer* ordinary passengers and season-ticket holders than in 1922. They now travel by road, because fares are only about one-half the present inflated railway charges. And the Executive is now running hundreds of excursions, at enormous unnecessary expense, to get some passengers!

The following comparison shows that the old relationship between ordinary daily passengers and excursionists turned upside down between 1922 and 1938:—

Passengers		1923	1929	1938
Ordinary	(millions)...	415	205	74
Season ticket	,, ...	456	403	369
Workmen	,, ...	238	237	222
		1,109	845	665
Excursion	,, ...	123	435	493
Total	... ...	1,232	1,280	1,158

Thus, the passenger train service had been largely duplicated to carry an even lesser total number of passengers! The late Lord Stamp said that the number of excursions on the L.M.S.R. only, rose from 7,460 in 1929 to 21,850 in 1938. (I do not possess figures for 1948.)

Consequently, very heavy private car traffic has also been created. On any day, and anywhere, numbers of them may be seen with only one person in them. To carry the passengers of a bus requires 50 or 60 of them—or 500 to 1,000 to carry the passengers of one railway. Hence the congestion in the streets of every large town. Presently, they will be completely choked with traffic.

During the last 25 years, a prodigious amount has been spent on streets and roads. Now the Ministry wants to spend another £1,500,000,000 to provide them with racing tracks! They have also demanded signalling, traffic controllers, car parks, traffic commissioners, police patrols, etc.

Probably most of these people could do their business much more easily, quickly and cheaply by telephone, telegraph, train, bus, bicycle, or even by walking. They also form only a comparatively small proportion of the community, and it is hardly good enough that, because they can afford to buy and run a car, the rest of the public should be called on to pay most of the foregoing expenditure, which motorists should pay themselves through a heavy increase in taxation on private cars.

Although railway lines are protected by fencing, and trains confined to a definite track (practically free of obstruction), no man is allowed to drive a train excepting after long experience and demonstrating a steady responsible character. But on the roads, anyone can secure a licence after an hour's driving test, and without any proof of his temperament. However well he passes the test, it is no guarantee that he will exercise equal care on the roads (full of obstructions and all sorts of snags). Therefore, licences should not be issued except after a searching inquiry into the applicant's character, and whether there is a real need for him to own his car. He could probably manage just as well with a cycle, or public transport.

Yours faithfully,

E. R. B. ROBERTS

A South African Electric Locomotive

24, Patrol Street, Kensington,
Johannesburg. June 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—As a keen reader of *The Railway Gazette* for the past ten years, I have been constantly on the lookout since 1947 for a "write-up," or even some comprehensive notes on the Class "3E" electric locomotive recently ordered by the South African Railways To date, I have only seen one photograph of the "3E" in *The Railway Gazette*.

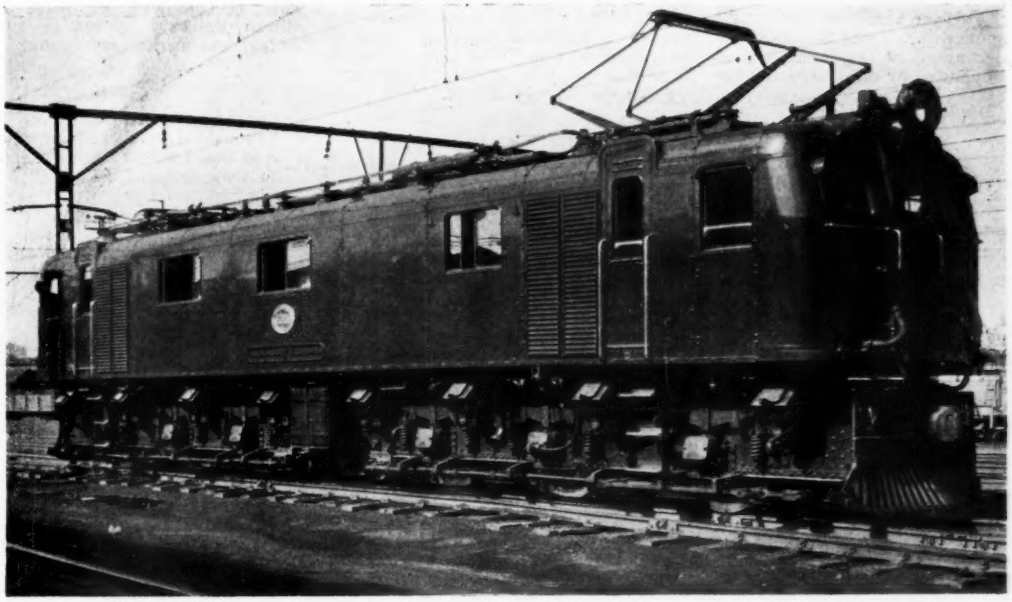
I have seen and travelled on many electric locomotives and can say that the "3E" holds its own well as a locomotive of clean appearance and good performance.

I am enclosing two photographs (one reproduced) of the "3E," which I trust you will find suitable for publication. Both photographs were taken by me at Braamfontein (Johannesburg), and I think that you will agree with me that the one clearly shows a great wealth of detail on the locomotive.

Wishing *The Railway Gazette* every success in the future,

Yours faithfully,

BRIAN LAWLOR



Class "3E" electric locomotive photographed at Braamfontein, South African Railways

Photo] [*Brian Lawlor*

The Scrap Heap

Pointless

Holidaymakers waiting for trains at Victoria Station on August 6 joined a long queue for sweets by mistake.—*From "The People."*

* * *

First Train Journey

Prince Charles, accompanied by his mother, Princess Elizabeth, made his first train journey on August 5, when the King and Queen travelled north for their annual holiday at Balmoral Castle.

* * *

Savings Bus

To encourage saving, the Stockholm Savings Bank has equipped a bus as a complete bank branch. This Savings bus travels through the suburbs of Stockholm, making frequent stops and signalling to the inhabitants to deposit their savings. The cashier and assistant cashier have a comfortable office, and can keep in touch with the head office by short-wave radio.

* * *

100 YEARS AGO

From The Railway Times, August 11, 1849

The taste for instituting Committees of Investigation which prevailed so strongly at the commencement of the half-year which has just expired, has paralyzed that individual activity which had existed for some time previous, and which exhibited itself at general meetings either in place or out of place, as the case might be. The immediate effects, in the meanwhile, of the researches and the reports of the Committees have proved anything but satisfactory, and in those cases where the verdicts are still undeclared, it is easy to trace the depressive influence of the doubts which spring from the delay. But upon all these comes up the consideration, "what shall we have to pay?"

* * *

Lineside Landmark

The distinctive sign at Lamberton, which denotes the boundary between England and Scotland on British Railways' East Coast main line, has been followed by a further sign near Carham, on the Kelso and Border Counties line. The design of the new sign consists of a double-headed battleaxe, supported by the Thistle and the Rose.

Tribute

Haven't our New York administrators ever heard of the London Underground system? For all our boasting about American ingenuity we still haven't produced a subway station in New York that compares with any of those done in London by Adams, Holden, and Pearson during the last twenty years.—*From "The New Yorker."*

* * *

Colour on the Railways

Recently I heard an amateur railway enthusiast criticising the multicoloured carriages and locomotives now to be seen on the railways.

What had incensed him most was the sight of that handsome engine *King George V*, of G.W.R. fame, appearing at Paddington painted blue. Its original colour was green. The brass bell presented to her after a speed demonstration in the United States before the war has not, however, been tampered with. She is the only British engine carrying such a bell.

A further complaint was that blue, green, brown and "plum-and-spilt-milk" rolling stock are all mixed up together.

Instead of this elaborate painting he suggested the insides of some of the main-line trains should be kept reasonably clean. —*"Peterborough" in "The Daily Telegraph."*

* * *

Praise Indeed

After travelling in British railway trains for 24 days, Mr. Bill Schmidt, Transportation Editor of the American journal, *Railway Age*, left Liverpool on August 9 for home.

With him, he said, he had brought the inborn American prejudice against nationalisation and a sneaking hope of finding British Railways in a state of chaos. Mr. Schmidt said: "I found a marvellous passenger-carrying system about which I could never say enough. It is the finest, the fastest, and the promptest in the world. Your main passenger problem is the same as ours—to get people where they want to go, get them there quickly and get them there on time. The difference seems to be that you have solved the problem." —*From the "Daily Herald."*

Service

A few days ago I sent to Waterloo Station for particulars of certain trains so that my wife could come to visit me in the sanatorium. Promptly came the information required, and the clerk who sent it wrote on the back of the envelope the words, "Good Luck."—*From a letter to the "Daily Mirror."*

* * *

Surprise Question

Young film star John Howard Davies was allowed to travel in the cab of a diesel train on a journey out of London.

The driver explained the levers and dials for an hour. Then John turned to him and asked: "Tell me, are you Oxford or Cambridge in the Boat Race?"—*From "The Daily Mail."*

* * *

A Platform "Pub"

The original station at Sloane Square was built in 1868. It incorporated a platform tavern, known for many years as "The Hole in the Wall," and it remains one of the few Underground stations with a platform "pub." At one time legend had it that it was the flight of stairs at this station that gave John Buchan the title for his novel "The Thirty-Nine Steps." In fact, there were 51, which were described in the course of years as "a scandal and a nightmare to the old and infirm."—*From "The Times."*

* * *

On May 11, Leading Porter Nockolds, of Oakleigh Park Station, Eastern Region, discovered that a fire had broken out in the roof of a platelayers cabin, which adjoins the signalbox at Oakleigh Park. After arranging for the New Barnet fire brigade to be summoned, he fought the fire and, with the assistance of two passengers, removed a number of drums of oil from the vicinity of the flames. His efforts were successful, and the fire was extinguished before the arrival of the fire brigade. Porter Nockold's prompt action prevented more serious damage, and has been recognised with an award, and a letter of commendation, made under the British Railways scheme of awards for gallant and meritorious service.

* * *

Beyond the Stops

Milepost 62¼ beyond the end of sidings adjoining Bexhill West Station, Southern Region. The sidings extend to a point slightly farther from Charing Cross than the passenger station, to which the official distance is 62 miles

Photo [*D. J. W. Brough*

Tailpiece

For August I had planned my break,
I thought it would be warmer,
And that I would enjoy the sun
In some secluded corner.

I studied seaside literature
Wherein waves sparkled brightly,
With pierrot shows and cinemas
To entertain me nightly.

I saw the trains pass by in June
With seats in them a-plenty,
While some I saw about mid-week
Had coaches wholly empty.

Came August and I then embarked
Upon my earned vacation,
But I received a nasty shock
On entering the station.

More folks than I had August planned
It left me badly shaken,
Each corridor was fully packed
And I was left forsaken.

Just then I saw a poster bright,
It told me to remember,
That one should take one's holidays
In June or else September.

R. M.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Working Results

Receipts (including the Beira and Shabani lines) for April, the first month of the new financial year, totailed £944,004. Expenses amounted to £656,022, leaving a net operating revenue of £287,982, an increase of £61,073 over that for April, 1948.

The Rhodesia Railways administration is continuing to work the Beira Railway, now Portuguese-owned, until September 30 next.

Traffic Carried

During the month under review, 210,538 passengers were carried, an increase of 37,272 compared with April, 1948, and the total tonnage handled amounted to 416,373, an increase of 48,283 over April, 1948. Train-miles run, totalling 618,752, were a record.

BURMA

Services Disrupted

Disruption of train services due to civil disturbances continued during May. Four more local trains running between Rangoon and Kamayut were extended to Thamaing during the month. In Maymyo district the services between Mandalay, Maymyo, and Nawnghkio were resumed on May 1 and those between Nawngpeng and Lashio on May 2. The armoured trains at Thamaing, Dabein, and Pegu remained at the disposal of the military authorities throughout the period.

All main cables from the tower cabin to location boxes have now been completed for the power signalling to Rangoon. Short runs from the location boxes to signals have now to be laid.

Insein Shops Intact

Insein town was re-taken by the Government troops on May 22. As it had been in the hands of Karen insurgents for over three months and the scene of continued heavy fighting, it was feared that the locomotive workshops would be much damaged, but they were practically unscathed and other railway properties suffered comparatively light damage only. The work of restoration has since been in progress.

INDIA

Assam Rail Link

The new railway link between the main Indian railway system and the Assam Railway, avoiding Pakistan territory, is now well under construction, and is scheduled for completion in February next.

Including existing metre-gauge lines it will be about 200 miles in length, and there will be some 70 miles of existing 2-ft.-gauge line converted to metre gauge and about 75 miles of new alignment and construction.

The narrow-gauge section being widened is the Darjeeling-Himalayan Extension railway from Kissengunj to Siliguri. The chief work is the new bridge over the Teesta river, of which the main piers have been completed, and a 250-ft. span has been erected on them. The new line will be metre gauge throughout, and will be connected with the East Indian broad-gauge system by the Ganges ferry at Mokameh, until a bridge replaces the ferry.

PAKISTAN

Railway Inspectorate

As a result of the recommendations of the Pacific Locomotive Committee, the former Government of India early in 1941 transferred the Railway Inspectorate from the administrative control of the Railway Board to that of the Department of Communications and placed it under the charge of a Chief Government Inspector of Railways, who acted as Technical Adviser to the Government. On the establishment of Pakistan, the Government Inspector for its two railway systems—the Eastern Bengal Railway, in Eastern Pakistan, and the North Western Railway, in Western Pakistan—continued to be under the Communications Division of the Ministry of Communications. This arrangement did not prove satisfactory because the Communications Division did not have an officer who could examine the Government Inspector's report from a technical point of view.

The Ministry of Communications, therefore, by a resolution dated April 6, ordered that the Railway Inspectorate for the railways in Pakistan be placed under the control of the Railway Division with effect from May 1.

CEYLON

Railway Budget

The Minister of Finance delivered his third budget speech in the House of Representatives when it assembled on July 14. The estimates of the revenue and expenditure for the financial year October 1, 1949—September 30, 1950, disclosed that the railway had budgeted for a deficit of Rs.15,383,156, the estimated working expenditure being Rs.72,883,156 against a revenue estimate of Rs.57,500,000. In addition to the working expenditure, a sum of Rs.20,000,000 is included as a loan by the Government repayable on the annuity system on the life of the assets to meet the cost of renewals and capital works.

The more important items provided for are the renewal of locomotives and rolling stock, the renewal of and additional plant and machinery to increase and improve local manufacture of parts, fittings, etc., additional water supply and electric lighting schemes, the renewal and strengthening of bridges, the relaying of parts of the Coast Line with new rails and the whole of the Batticaloa-Trincomalee Light Railway with heavier section rails, and the provision of increased and better housing for supervisory, clerical, and labour grades.

A sum of Rs.8,601,000 is also provided

A South African Suburban Station

Bellville Station, Cape electrified lines, South African Railways

on account of arrears of maintenance during the war period in respect of locomotives, locomotive boilers, rolling stock, permanent way, bridges, signalling and buildings.

The gap between railway revenue and working expenditure is attributed to payment of increased salaries and cost-of-living allowances to staff, employment of a large personnel consequent on adoption of an all-round 8-hr. day, higher cost of coal, oil, permanent way and all other equipment and stores and the downward trend in traffic returns since the end of the war, due to keen competition from road hauliers.

New Timetable

A revised timetable has been introduced to provide a faster and more adequate service. The previous revision was in 1946. The new service, which provides an additional annual mileage of over 140,000, besides giving an all-round acceleration in speed includes additional trains for both long-distance and suburban travellers on all main and branch lines. This has been made possible by a slight improvement of the track and the recent arrival of some of the diesel locomotives ordered from the United Kingdom.

Housing Progress

During the past year nearly 500 quarters of the latest semi-detached cottage-type for workers were completed. They are for workers at Ratmalana workshops and running shed and other staff at Maligawatte and other places. A few staff bungalows and quarters for workmen were also built at out-stations. When the present large programme of housing is completed, it should relieve the acute shortage in accommodation for labour grades and supervisory staff.

ARGENTINA

Northern Transandine Railway Blocked

Temperatures of 20° C. below zero, accompanied by heavy snowstorms, have again caused a suspension of traffic over the Northern Transandine railway between Argentina and Chile.

Suspension of Work on New Branch

The General Belgrano Railway has decided not to proceed with the construction of the branch between Suncho Corral and Tolloche, referred to in *The Railway Gazette* of June 11, 1948. The estimated cost of the line was 37,642,486 pesos.

GERMANY

"Glass" Railcar Restored to Service

A special feature of the Reichsbahn tourist services in the Alpine region south of Munich before the war were the two "glass" railcars placed in service in 1935. One, a diesel-power vehicle, was destroyed during the war, the second, an electric railcar, has been rehabilitated and thoroughly modernised, and was placed in service again in July. The railcar accommodates 72 passengers, and is 67½ ft. long. Its two electric motors totalling 550 h.p. enable a top speed of 68 m.p.h. to be reached. The entire side walls of the vehicle and a portion of the roof are of glass. The latter can be partly opened. To prevent condensation on the glass panels and the glass roof, all glass sheets are double.

For the present, day excursions by this "glass" railcar take tourists from Munich to Mittenwald (the frontier station on the German side of the Munich-Innsbruck line *via* Garmisch-Partenkirchen, 74 miles south of Munich) whence the railcar returns empty as far north as Tutzing, 49 miles, there transferring to the line for Kochel, 22 miles south-eastwards.

At Kochel, the railcar picks up the excursionists who, in the meantime, have covered the gap between Mittenwald and Kochel in a Reichsbahn motorbus, and return is made to Munich. Special trips are envisaged on the electrified main line between Munich and Salzburg (95 miles) in connection with the Salzburg musical festivals.

It is also planned to place the railcar in service between Munich and Ludwigstadt (the frontier station of the Soviet zone on the Munich-Nurnberg-Leipzig-Berlin line). The line is electrified throughout between Munich and Ludwigstadt, a distance of 380½ miles. The railcar would provide the fastest connection between these termini.

Publications Received

Garcke's Manual of Electricity Supply, 1948-49. Edited by F. C. Garrett. London: Electrical Press Limited, 23, Great Queen Street, W.C.2. 8½ in. × 5¼ in. × 2½ in. 976 pp. + XCV. Price £3 3s.—Vol. 46 of the "Manual of Electrical Undertakings & Directory of Officials" appears with the new title given above as being more appropriate to the changed conditions of the electricity supply industry. This volume, indeed, is of a transitional character, retaining as far as possible the particulars of "Undertakings" but also giving, in a separate section, the new groupings of the Area Boards; an alphabetical list of generating stations cross-indexes them to their previous owners. There is also a copyright list of officials and in other ways the book endeavours to present all recent relevant information. As regards traction supplies, however, there is not a lot to be gathered, though a sub-section details non-statutory plants; industrial power stations are not included unless they are also "selected" units. The new title is thus logical and justified, for, as a work of reference concerned with an important industry, "Garcke's Manual" still occupies a pre-eminent place and obviously intends so to do in the future.

Newnes' Engineer's Reference Book, 1949. Third Edition. Edited by F. J. Camm. London: George Newnes, Limited, Tower House, Southampton Street, Strand, W.C.2. 7½ in. × 5 in. × 2 in. 1,608 pp. Illustrated. Price 45s. net.—This work of encyclopædic proportions is intended to supply the ever-present need for an accurate and authoritative reference book covering all the major branches of mechanical engineering. The changes of the past 20 years in workshop methods, standardisation, machine tool design, the higher qualifications now required of engineers, and the advances in engineering practice during and since the war have all made necessary the publication of this new and comprehensive work. Considerable efforts have been made to bring within the covers of one volume the information and references at present scattered throughout several volumes. Specialists have contributed to particular sections and there is an extensive and fully cross-referenced index. Among the many section headings are the following taken at random: workshop mathematics; drawing office practice; ball and roller bearings; couplings; lathe work; grinding; metallurgy; welding; boilers; properties of plastics; lighting of buildings; time and motion study; and works cost accounts.

Great Britain-Germany Timetables.—The Generalbetriebsleitung West (Western Operating Division), Bielefeld, has issued on behalf of the German Railways in the Anglo-American Zone a folder in English, giving abstracts of timings by the various rail routes from London to principal destinations in the three western zones. The folder is probably the first publication of its kind since the war by the German Railways for foreign consumption. Tables are in the usual Kursbuch form with conventional signs; as much as possible (including some place names such as Cologne, but not all those which usually are anglicised) has been translated into English. Connections are shown to and from Berlin *via* Helmstedt but no other Russian Zone timings are given.

Vanadium Steels for Locomotive and Car Construction.—An illustrated 88-page brochure, describing the full range of vanadium steels and irons suitable for locomotives and rolling stock, has been published by the Vanadium Corporation of America, 420, Lexington Avenue, New York 17, N.Y. A short account of each grade, with typical analyses, is intended to assist the users of vanadium steels in selecting the most suitable composition for any specific application. Vanadium steels are designed to withstand high temperatures and the stresses resulting from repeated impact encountered by railway equipment. Other advantages claimed are higher tensile strength without loss of ductility, higher ratios of elastic limit to tensile strength, wide tolerances permissible under heat treatment, and superior fabricating and machining qualities.

Holidays in Scotland.—The latest addition to the illustrated holiday handbooks issued this year by Thos. Cook & Son Ltd. is "Holidays in Scotland." This describes a wide variety of inclusive tours ranging from five days in the vicinities of Edinburgh and Glasgow to a 15-day air tour of Scotland beginning and ending in London.

Metrobus. Paris: Editions Camille Rousset, 114, Rue et Place La Fayette.—This is a new official guide to Paris underground and bus services, and although it is intended for French business men and tourists and therefore compiled in French we have no hesitation in recommending it to British visitors to Paris, who should have no difficulty in following the admirable layout of the sections. The itinerary of every bus and Metro route is given and all Metro stations are listed, with the number of the line and the first and last train times. There are sectional street plans, preceded by an alphabetical list of all streets, with map references and the number of the bus and underground lines serving each. Similar information appears for hotels, shops, theatres, banks, ministries, etc. There are enlarged maps of the larger city squares and the surrounding streets and of the neighbourhoods of the large termini. Those on holiday or business in Paris will find the guide a valuable time—and franc—saver.

New "Limited" Expresses in New Zealand

Accelerated thrice-weekly services between Christchurch and Invercargill, representing the fastest timings in the Dominion

THE New Zealand Minister of Railways announced recently that new fast "Limited" expresses were to be introduced on August 1 between Christchurch and Invercargill in the South Island.

Covering the 367·2 miles in 11 hr. 20 min. (an improvement of 66 min. on the best existing schedule and of 45 min. on the fastest schedule which has ever hitherto operated on this route), the new trains will leave Christchurch at 8.35 a.m. and Invercargill at 8.0 a.m. on Mondays, Wednesdays and Fridays; that is, on alternate days to the existing thrice-weekly through service, which will continue as at present, thus giving daily through service between Christchurch and Invercargill. The existing semi-fast expresses between Christchurch and Dunedin and between Dunedin and Invercargill also will continue as at present, subject only to minor adjustments of timings.

The new "Limited" trains will make only nine intermediate stops for passenger traffic, compared with nineteen made by the present service, and with an average overall speed of 32·4 m.p.h. will be the fastest steam-hauled long-distance passenger train services in New Zealand. The Minister of Railways was careful to emphasise that safety was not being sacrificed for speed in arranging the new schedules and that the usual regulations for safe running had been observed.

The services will be, over comparative distances, the fastest on a 3-ft. 6-in. gauge railway in Australasia. Over the Canterbury Plains, the south-bound "Limited" will cover the 151·1 miles from Christchurch to Oamaru in 3 hr. 56 min., at 38·4 m.p.h., including two 8-min. stops. The "Australind" in Western Australia averages 35·4 m.p.h. over the 115·2 miles between Perth and Bunbury, with one intermediate stop. Between Perth and Brunswick Junction, the 99·2 miles are run non-stop in 2 hr. 43 min. in each direction (36·5 m.p.h.); whereas the new "Limited" in New Zealand will cover the 99·5 miles between Christchurch and Timaru in 2 hr. 33 min. down and 2 hr. 40 min. up—including stops of eight and ten minutes respectively at Ashburton.

Fastest Booked Train

Of the encouraging crop of new start-to-stop bookings representing average speeds of 40 m.p.h. and upwards, the best is 43·0 m.p.h. from Ashburton to Timaru (47·3 miles in 66 min.) for the down train. This becomes the fastest start-to-stop booking of a steam-powered express train in New Zealand at the present time.

These speeds, of course, are still considerably below those in Java and Japan before the war (up to 50 m.p.h. between stops) and a little below those in South Africa today. Track in New Zealand, however, is not quite as heavy and substantial as that standard in those countries mentioned, and the continued absence (since 1917) of dining or buffet car facilities in trains necessitates fairly lengthy halts at refreshment-room stations. There have been hints lately in newspapers that the re-introduction of refreshment facilities in trains, possibly in the form of buffet cars, is being examined by the authorities.

Existing rolling stock of the most modern type available will be used in the new services, which will normally comprise four second-class coaches seating 224 passengers, three first-class seating 105, and one or two vans for luggage and mails. The coaches are 56 ft. in length over headstocks, 8 ft. 11 in. wide at the waist, and 11 ft. 6 in. high. With all-steel underframes, reinforced ends, and steel-panelled bodies, the second-class weigh about 27½ tons tare each and the first-class about 29 tons. The firsts have reclining-chair seats and pressure-ventilation equipment. With one van, an eight-coach train will represent a load, with passengers and luggage, of just under 250 tons. The extent to which the trains may be strengthened beyond that total to meet fluctuations in traffic has not been announced.

It is not expected that there will be alterations in the locomotive arrangements for working the new services. At present the through trains are worked by Pacific-type locomotives of class "Ab" between Christchurch and Oamaru, with a change of engines at Timaru, and by "J" or "Ja" class 4-8-2 locomotives between Oamaru and Invercargill, with a change of engines at Dunedin. Assistance is provided in the form of a second engine over the 1 in 50 gradients between Oamaru and Dunedin when the load exceeds about 280 tons, but north of Oamaru and south of Dunedin loads of up to 400 tons are handled on the present schedules by a single engine.

Previous Through Services

Through service between Christchurch and Invercargill dates back to November 1, 1904, when the journey of about 369 miles (there have been a number of realignments since to reduce the distance) occupied 14 hr. 40 min., with numerous stops *en route*. Previously through travellers had to stop the night at Dunedin. In 1904 the latest coaches comprised mainly 47½-ft. stock with composite wood and steel underframes, open-end platforms, gas lighting, and comparatively primitive toilet facilities.

The annual reports of the period featured the fitting of cushions to the seats in the second class and the provision of lavatories in the coaches. Hitherto, second-class seating generally comprised plain wooden benches arranged longitudinally. First-class passengers could enjoy the comparative luxury of low-backed chair seats arranged in typical American style, but there was a considerable number of compartment-type vehicles also in service at that time, and the first experiments with reclining-chair seats were being conducted. Motive power comprised 4-6-0 type locomotives of various classes and manufacturers on the easier sections, supplemented by a number of the Baldwin-built Pacifics of class "Q" for the heavier work south of Oamaru.

The journey time was reduced to 13 hr. 12 min. in 1909, and to 13 hr. in 1914, but the service was withdrawn as a war measure in 1917. On its restoration in 1919, just before Christmas, the time was extended to 13 hr. 18 min., a result of the withdrawal of dining car service, but in 1925 there came a substantial acceleration—to 12 hr. 5 min. By this time, of course, the famous "Ab" class Pacifics had taken over most of the important main-line work and track and bridges had gradually been strengthened to meet the increased speeds now demanded. This schedule, which for the first time in New Zealand entailed an average speed of 30 m.p.h. (including all stops) over such a distance, did not last. It was eased slightly to 12 hr. 18 min. in 1926 and to the present 12 hr. 26 min. in 1929, having remained unchanged since.

From observation and from published reports, the track comprises mainly 70-lb. rails in 42-ft. lengths dog-spiked direct to wooden sleepers, of which in straight track there are 18 to the rail length (or 2,262 per mile). This track is laid in river gravel ballast, with nine inches of ballast under the sleepers. Bed-plates are provided on sleepers at the rail-joints. Heavier rail is now being laid in as relaying proceeds, but there does not appear as yet to be a very great amount of this in the South Island main line.

The 1949 Railroad Fair at Chicago

AS recorded in our issue of July 15, the 1949 edition of the Railroad Fair opened on the lake front of Chicago on June 25 and will continue until October 2. Though there are many new railway exhibits and extensions and improvements of last year's features, the attractions this year take the form mainly of many more entertainments for the general public, and all repeat exhibits have been altered or supplemented to provide greater entertainment appeal. Rest room and refreshment facilities have also been increased and improved.

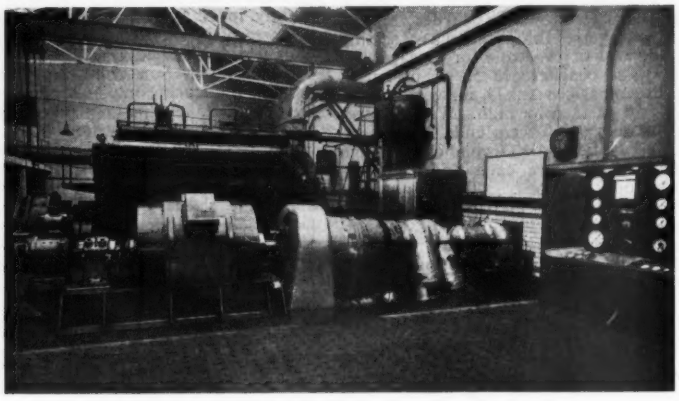
Among the new railway exhibits are a number of the latest types of locomotive and rolling stock, two new historical exhibits, a full-size model of one of the portals of the famous Moffat Tunnel, and a San Francsico cable tram car running on its own track with cable slot complete. The historical exhibits are Pennsylvania Railroad locomotive No. 7002 (an early Atlantic which, it is claimed, attained a speed of over 127 m.p.h. in 1905), and a full-size model of the first train to run in Illinois, shown by the Wabash Railroad. Sectional and other full-size models of Pullman and Budd lightweight coaches and sections of coaches are also in evidence, and other trade exhibits are numerous.

The "Wheels A-Rolling" pageant has been much improved. On the 450-ft. by 150-ft. stage, nearly every form of transport from the stage coach to the streamline train is to be seen. Three tracks enable trains to move simultaneously in both directions. New features include "Rails Across the Prairie," a mid-19th-century pageant, "A Turn of the Century," a pageant of Buffalo Bill days, and several up-to-date exhibits, notably a Chicago, Milwaukee, St. Paul & Pacific Railroad electric locomotive—lent for the duration of the Fair—normally used in passenger service over the Cascade Mountains. It weighs 233 tons, has 12 driven axles and is 76 ft. long, and operates in the pageant from storage batteries.

The Deadwood Central narrow-gauge railway was worked in 1948 with a single train—which earned £10 a train-mile—but this year the Denver & Rio Grande Western Railroad has provided a second train. The popular entertainments this year include a rebuilt 19th-century gold-mining township, water-ski acrobatics, skaters performing "Ice-Frolics," a children's puppet theatre, and fireworks. Nearly 40 railway administrations are sponsoring the Fair.

A New British Gas Turbine

Simple open-cycle design with separate power turbine for traction or stationary power generation developed by Ruston & Hornsby



Gas turbine with alternator on test at Lincoln

AT the end of the war, the firm of Ruston & Hornsby Limited was quick to realise that wartime research on aircraft gas turbines had opened the way to the design and development of general-purpose gas turbine plants based on new conceptions of weight and efficiency. Convinced that there would be a market for simple open-cycle gas turbines which were readily adaptable for use in different applications the firm decided to build a prototype plant as a private venture. The first machine has been installed in one of the firm's own power stations, where comprehensive testing started in June, 1949, in preparation for the supply of electrical power to the works.

This machine is claimed to be the first British gas turbine, designed throughout as a long-life prime mover, to be put on the market. Both the power output and mechanical design of the Ruston gas turbine were chosen to suit existing productive resources. Typical duties to which this design is applicable are railway locomotives, portable power plant for transport by rail, air, or road, and stationary plant for power generation where water is scarce or not available.

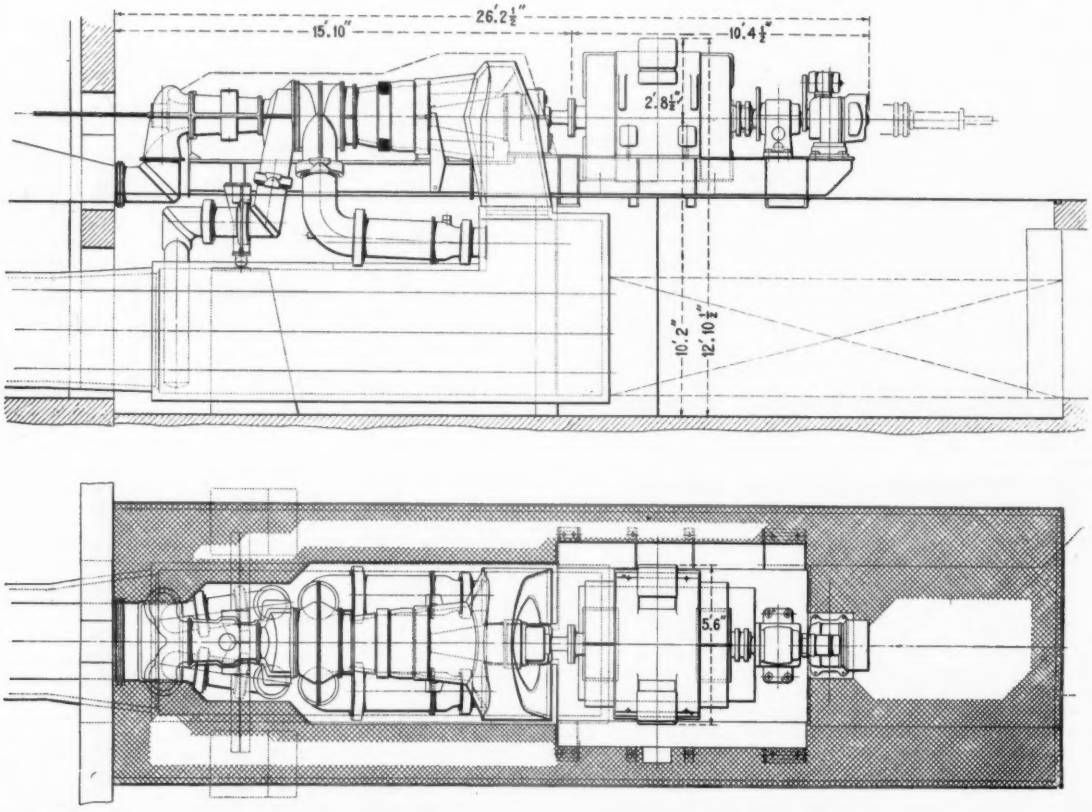
The first gas turbine built by Ruston & Hornsby has a continuous full-power rating of 1,070 b.h.p. It has been designed as a general-purpose prime mover to satisfy the conditions of long life, simplicity, and low first cost. The turbine plant consists of a 13-stage axial flow compressor delivering air through a contra-flow tubular heat exchanger to twin combustion chambers.

Method of Working

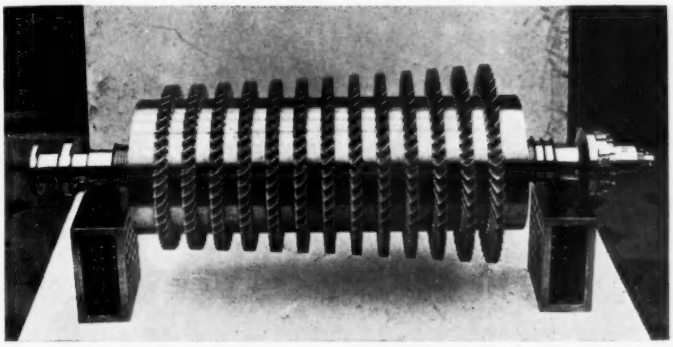
The hot gases pass to a two-stage turbine which supplies its entire output to the compressor. The exhaust from this compressor-driving turbine then passes through a two-stage "power" turbine from which the mechanical drive is taken through epicyclic reduction gearing. The exhaust from the power turbine is ducted back through the heat exchanger to atmosphere.

To ensure long life, a fairly low maximum gas temperature has been employed, and all blade stresses have been kept low. The machine may be operated with or without the heat exchanger with little modification, making it readily adaptable for peak load work or any applications, such as a locomotive, where the tubular type of heat exchanger might be too bulky.

With a maximum gas temperature at the turbine inlet of 1,340° F. (727° C.), a compression ratio of 4:1, and a heat exchanger of 75 per cent. effectiveness, the full-load plant thermal efficiency at the output shaft is 24 per cent., and at 40 per cent. load the efficiency is 18½ per cent. If, however, the plant is operated without a heat exchanger, the efficiency at full load



General arrangement and principal dimensions of Ruston gas turbine



Rotor for 13-stage axial-flow compressor

would be 17½ per cent., falling to 11½ per cent. at 40 per cent. of full load. With the heat exchanger, the maximum rated output is 1,070 b.h.p., but without the heat exchanger the maximum rated output is increased to 1,250 h.p.

Referring to the general arrangement drawing of the plant reproduced on page 184 it will be seen that it has been designed for installation in a power station with the floor line at the level indicated in the drawing. The heat exchanger is situated in a position corresponding to that of the condenser of a steam turbine plant. The components of the turbine fall into four main assemblies:—

(1) Axial compressor and high-pressure turbine assembly.

(2) The combustion system.

(3) Low pressure "power" turbine with reduction gear.

(4) Heat exchanger.

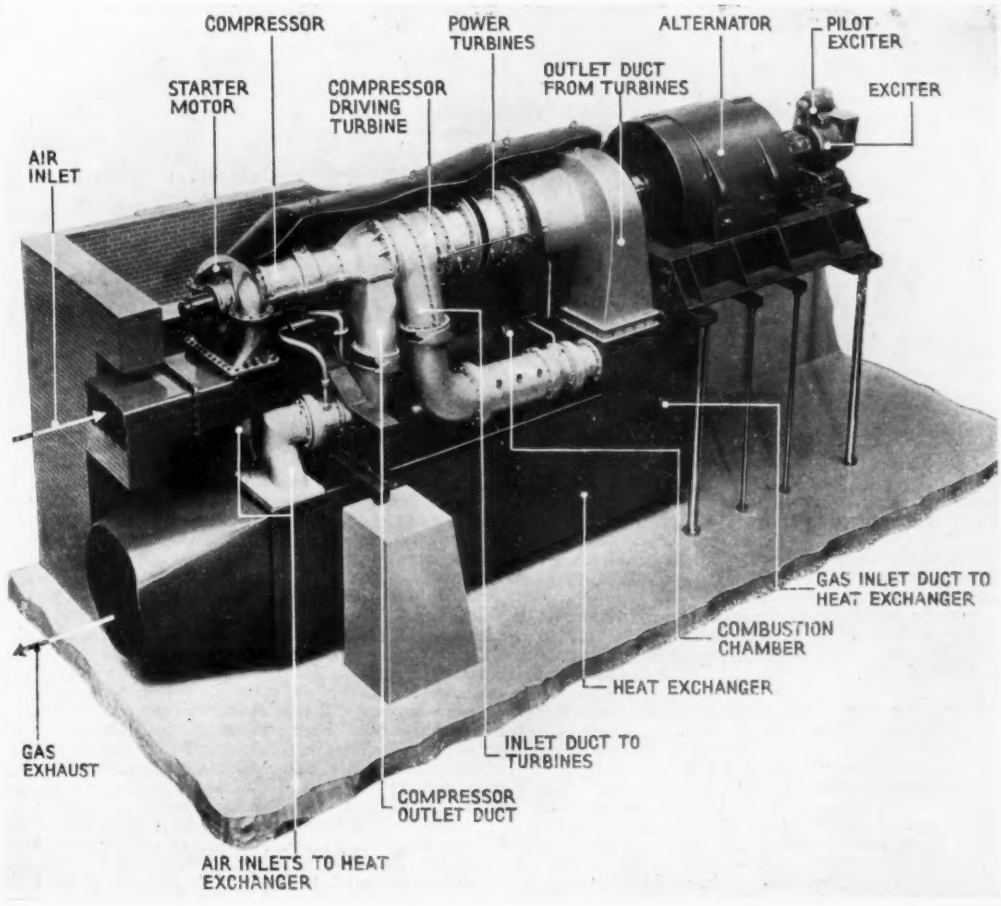
For driving an alternator, the mechanically independent power turbine is a great advantage, as a reduction in power output can be obtained by reducing the r.p.m. of the compressor-h.p. turbine shaft. This reduces the temperature, pressure, and mass flow of the gas at the power turbine inlet, while the r.p.m. of the power turbine, which is directly coupled to the alternator, remains constant.

The mechanically independent power turbine also makes the Ruston & Hornsby gas turbine particularly suitable as a prime mover for locomotives whether employing electric or direct mechanical transmission. For this application a smaller heat exchanger may be fitted or this component may be entirely omitted.

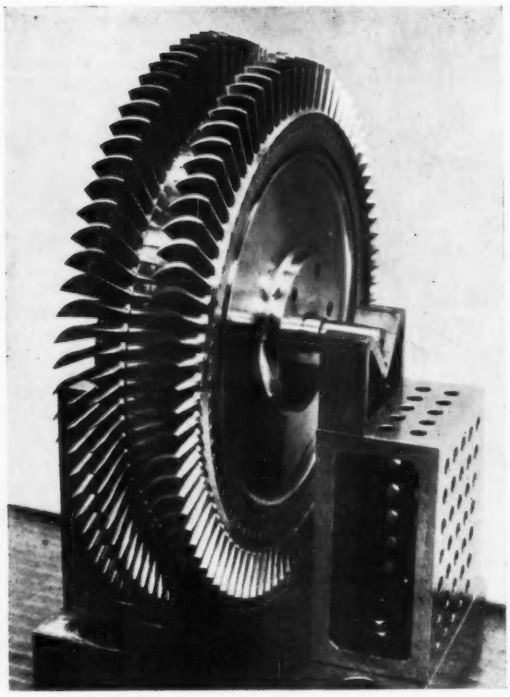
For ship propulsion a heat exchanger would usually be required, and in this case could be mounted with the tubes vertical, the upper part of the heat exchanger occupying the lower part of the funnel.

For a portable power plant, the heat exchanger may be arranged alongside the rotating components instead of underneath them, so that the complete plant may be mounted on a flat concrete floor. If required, the heat exchanger may be added after the plant has been in operation for some time. Owing to the absence of vibration, it is not necessary to provide strong or elaborate foundations for the plant, as for an oil engine.

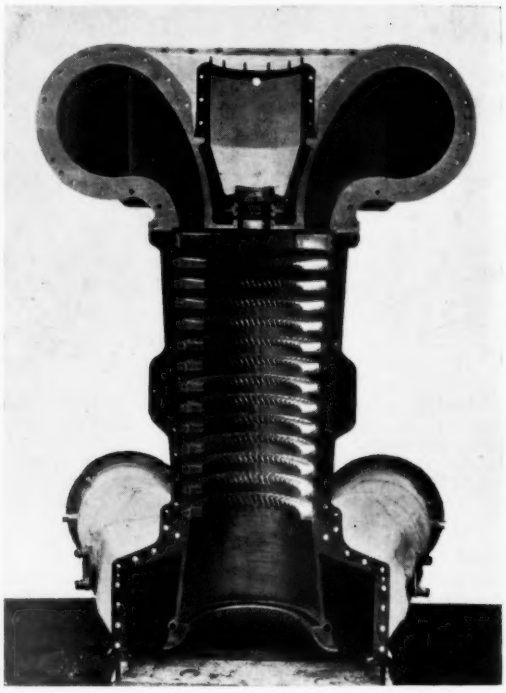
With the exception of the main frame, each of the four assemblies mentioned above is independent and can be dismantled without interfering with any of the other groups. Flexible couplings have been provided in all the gas ducts to ensure that no stresses are transmitted between the various sections of the plant by thermal expansion. Thus, the heat exchanger is suspended from four tension bolts, the upper ends of which seat on springs. Each of the gas and air pipes leading to the heat exchanger is provided



Model of the Ruston gas turbine showing arrangement of parts



Rotor of compressor-driving turbine



Lower half of casing with blades in position

with suitable flexible joints to allow flexing to take place in any direction.

The main frame is also used as the oil tank, a feature which allows compactness and ensures a uniform temperature. No water is required in any part of the plant for cooling purposes. The turbines are cooled by air bled from suitable points in the compressor, while the heat generated in the lubricating oil in the bearings and reduction gear is dissipated in a finned tube-type cooler. Starting is by means of a 15-h.p. 24-V. electric starter motor, or, alternatively, by an air motor of equivalent power.

The critical speeds of both rotor systems in the turbine are well above the running range and there is no difficulty in operating the plant continuously at any load down to zero net output. Provision is made for the following contingencies: (*a*) overspeed of the compressor-turbine rotor; (*b*) overspeed of the power turbine rotor; (*c*) failure of lubricating-oil pressure.

The entire control system is operated by a hydraulic servo-system supplied by the main lubricating-oil pump. The use of this arrangement makes possible the provision of alternative safety devices such as temperature control and a manual emergency stop if desired. A special type of governor has been designed which enables three distinct types of governor response to be obtained from the standard unit:—

(1) Stable governing over the full load range at a constant speed irrespective of load.

(2) Stable governing with a drooping speed characteristic as the load is increased.

(3) "De-tuned" governing for driving an alternator supplying current to a constant frequency system.

The fuel and lubricating oil pumps are driven by an electric motor. The fuel system is capable of operating satisfactorily with fuels of a wide range of viscosity. The development of a combustion chamber to burn the heaviest grade of residual fuel is now in an advanced stage. The complete plant weight, as installed in a power station, is 17½ tons, including the alternator.

FOREIGN RAILWAYS INVESTMENT TRUST.—Reconstruction of the board is announced by Foreign Railways Investment Trust, which in May received an offer from the Commercial Bank of Scotland (London) Nominees, acting on behalf of Lord Rotherwick and others, of 40½ for preference and 4½ for ordinary stock. The old board, composed of Mr. H. C. Drayton (chairman), Mr. W. J. Eldridge, Mr. R. W. Adeane, and Sir Montague Eddy, has resigned. The present directors are Lord Rotherwick (chairman), Sir W. N. Cayzer, and Mr. A. Macintosh.

NEW STOCK FOR THE SERNFTALBAHN.—The journal *Schweizerische Bauzeitung* reports the modernisation of the Sernftalbahn, an electric railway in the Swiss canton of Glarus. The first of three new motor cars went into operation in May last. The cars have four axles, weigh 25 *tonnes*, and have accommodation for 50 seated and 50 standing passengers as well as a spacious luggage compartment. They were built by the Schweizerische Wagenfabrik Schlieren and electrically equipped by the Maschinenfabrik Oerlikon. Each vehicle has four 750-v. d.c. series motors of 100 h.p. at the one-hour rating. The Westinghouse-Knorr single-chamber air brake is supplemented by four rail brakes of 4 *tonne* vertical power operated by a 48-cell battery. On the 14 km. from Schwanden to Elm, with a climb of 500 metres, the journey time can be reduced from 52 to 40 min.

HACKBRIDGE & HEWITTIC.—At the annual meeting of the Hackbridge & Hewittic Electric Co. Ltd. on July 27, the Chairman, Mr. Thomas F. Lister, said that during the year under review orders in hand were again a record, and more than one-third of their output had been directed into overseas markets; this was particularly marked in the rectifier department, where they now had a larger proportion of orders for abroad than at any time in their history. The transformer department had a very heavy programme of orders for the British Electricity Authority, including units of the largest capacity, while requirements for distribution purposes were also being maintained. Although electrical developments at home requiring direct current, especially for main-line railways, trolley-buses, and tramways, had not yet reached a stage where orders could be placed, the company was ready to supply the equipment when the time came. Constant research was being conducted with a view to perfecting their products. The position regarding supply of materials was improving; and they looked forward to maintaining their factories at full capacity for some time ahead.

METROPOLITAN - VICKERS DISTRICT OFFICES.—The address of the office at Stoke-on-Trent (sub-office to Birmingham) of the Metropolitan-Vickers Electrical Co. Ltd. has been changed to Stoke Road, Stoke-on-Trent. Mr. T. I. Paterson continues in charge. The telephone numbers are unchanged (Stoke-on-Trent 48630 and 48639). The Erection and Traction Erection Departments of the Birmingham office have removed from Bennett's Hill to 26-28, Holloway Head, Birmingham, 1, where the company's Lamp Sales Office is still located (telephone: Midland 3842-3-4).

Remote Supervisory Control for London Transport N.E. Extension

Rapid location and correction of current supply interruptions assisted by new type of multi-purpose control key

SPEED of operation without loss of reliability is an important requirement in a supervisory system controlling the power supply to underground railways. Following a complete power failure during peak traffic periods, stations soon become packed with intending passengers and it is essential to have all services running normally a few minutes after restoration of the power supply.

Working in close liaison with the technical staff of the London Transport Executive, engineers of the General Electric Co. Ltd. have successfully met this requirement in designing the supervisory control system for the London Transport Central Line extension from Liverpool Street to Loughton and the Hainault loop line.

The area in which the remote supervisory control system operates contains 11 transforming, rectifying and distributing substations located at the following stations: Bethnal Green, Leyton, Leytonstone, Redbridge, Newbury Park, Hainault, South Woodford, Roding Valley, Loughton, and Epping.

The switchgear at all 11 substations is arranged to be controlled from South Woodford substation. Control of switchgear at substations other than South Woodford is effected remotely over pilot cables, while that at South Woodford is directly controlled over multi-core cables connected between a control cubicle and the substation switchgear.

The supervisory control apparatus associated with each substation consists of a control cubicle installed in the control room at South Woodford, and a supervisory unit located at the substation. The 11 cubicles, with an additional cubicle provided for future development, are arranged in the shape of an open rectangle so that the control engineer at South Woodford can see at a glance conditions on the whole system.

A control panel fitted at the front of each cubicle is laid out in the form of a mimic diagram of the power network at the substation concerned. Keys of an illuminated-handle type are employed for the control of switchgear; these keys, which provide both control and indication facilities, have materially assisted in enabling the process of opening or closing a circuit breaker to be speeded up to the time of two seconds. One key of this type both selects and operates the remote switchgear, whereas in some earlier systems separate keys have been required for the two functions. Indications that both operations have been effected is given by the handle lamps in the new keys instead of by two separate indicator lamps. By simplifying the procedure needed for restoring a circuit breaker, a considerable cumulative gain in time is achieved when a number of breakers are involved after a power failure.

Small lamps are provided for giving indications of alarm devices and of switchgear not arranged for operation by supervisory control. Relays and selectors of conventional telephone type are mounted in the cubicle on gates which may be swung out for easy maintenance. With the gate swung out, the wiring of the control-panel key springsets and lamps becomes readily accessible.

The supervisory control system provides the following facilities:—

(1) Control and indication of circuit breakers in 22 kV. 3-phase a.c., incoming feeders.
(2) Control and indication of circuit breakers in feeders supplying steel tank rectifiers associated with the track supply.
(3) Indication of circuit breakers connecting output from rectifiers to d.c. busbars.
(4) Control and indication 630V. d.c. track feeder breakers. These breakers are arranged for automatic tripping from tunnel sections in an emergency; a special indication is given on the control panel, and a lock-out device prevents restoration of any breakers tripped from a tunnel until the emergency which caused the tripping has been cleared.
(5) Control and indication of contactors in the supply circuit to escalators.
(6) Control and indication of circuit breaker in feeder to 22 kV/660V/440V transformer providing 3-phase a.c. supply to lighting busbars.
(7) Control and indication of lighting feeder breakers on low-voltage side of transformer referred to above.
(8) Control and indication of circuit breakers in 440V. 3-phase a.c. supplies to air-compressor motors.
(9) Control and indication of breakers controlling motor-generator sets producing 600V, 33-1/3 cycles single-phase a.c. supply for signalling purposes.
(10) Control and indication of circuit breakers in the 600V feeders mentioned in (9).
(11) Indication only of contactors for control transformers.
(12) Continuous indication of the condition of the air pressure at certain substations (high, normal or low).

Control cubicles at South Woodford substation

(13) Continuous indication of the condition of rectifier loads (high, normal or light).
(14) Special indication that the track is "alive" whenever a track feeder breaker is tripped and the associated section of track remains alive.
(15) Restoration of power to the affected section of track after "tunnel trip" conditions.
(16) "Dead" and "alive" indications in connection with 600V. a.c. signals supply busbars.
(17) The connection of a motor generator set to "dead" busbars; (the motor generator set normally connects automatically to the busbars when it has run up to speed and synchronised with the busbars supplies).
(18 Indication of rectifier locking out.
(19) Indication of faults which may develop on the pilot wires.

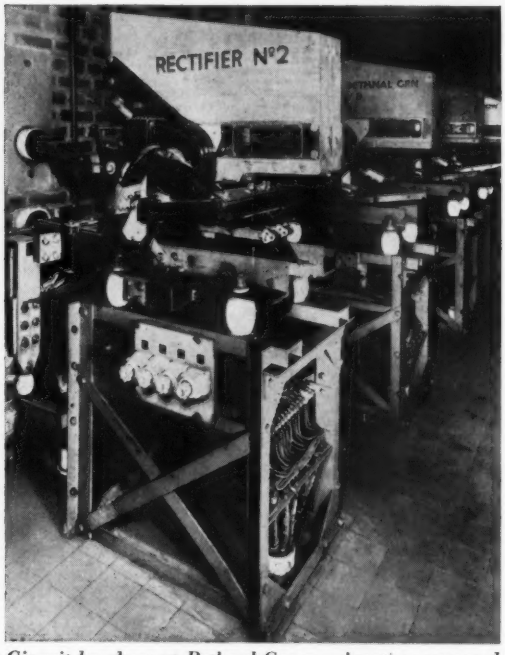
(20) Indication of power failures both at South Woodford and the substations.

Additional indications are given if an alarm cycle fails due to incorrect impulsing or if a dirty auxiliary contact is encountered during the operation or indication of a circuit breaker.

Signalling Channels

Apart from South Woodford control panel, which is connected to the local switchgear by multi-core cables, each substation control cubicle is joined to the supervisory unit at the respective substation by two pairs of pilot wires. Under normal working conditions, both pairs are used for signalling. One pair carries signals for a select and operate sequence, while the other pair returns signals for alarm cycles.

In the event of one pair being open-circuited by a fault, supervisory control and indication can be arranged immediately to function over the good pair. Under these emergency conditions there is no diminution in the facilities available, the only effect being to increase the time required to complete a series of operations, since signalling over a single pair of wires can proceed at any time in one direction only. The control station circuits are normally ready to receive a signal (*i.e.* an alarm cycle) from the substation. A select and operate cycle takes precedence over an alarm cycle, and any alarm cycle which may be initiated during a select and operate sequence is held up until such time as the sequence has been completed.



Circuit breakers at Bethnal Green substation operated by the remote supervisory control system

Allocation of Switchgear

At each substation three receiver selectors are used to select the switchgear to be controlled or indicated. Each selector has 23 available outlets, so that the maximum number of "points" which can be controlled and/or indicated at any one substation is 69. In practice, only the first 20 outlets on each selector are used. A similar allocation of selectors and divisions of selectors is made at the control station for working to control keys and indicator lamps.

Signals

D.c. pulses are transmitted in certain sequences to form codes for ensuring correct selection and operation of the switchgear. The pulses are separated by break periods of equal duration, the combined make and break period forming an "impulse." The pulses are either positive or negative in polarity and the code varies for each item of switchgear.

A 9-element code is sent to a substation to select and operate a circuit breaker. The first 7 pulses select the required point on one of the receiver selectors at the substation, and the eighth pulse determines whether the breaker is to be opened or closed. The ninth element of the code is composed of several pulses which perform various functions, the most important being the actual operation of the circuit breaker and the testing of the breaker point circuit for the new condition of the breaker.

The operation of a circuit breaker by local control, or a change of indication of air pressure, causes an 8-element code (*i.e.*, an alarm cycle) to be sent back to the control station. The first 7 pulses progressively select the required point on one of the three receiving selectors at control, and the eighth pulse gives an indication of the condition of the affected item of switchgear.

Circuit Operation

Select and Operate Sequence-Control Station. The control key of the circuit breaker to be operated is thrown to and held in one of the two non-locking positions of the key springsets. The lamp in the key handle is flashed and a point on one of three searcher selectors is marked. The affected selector self-drives and halts on this marked point. A code-sender selector then begins to drive round its bank, the strapping of which, together with connections resulting from the position of the searcher selector wipers, determines the sequence of positive and negative pulses to be sent out to the line.

Select and Operate Sequence-Substation. The impulses are received at the substation by a chain of relays. Each impulse is applied to a set of three relays, one which operates on a positive pulse, another which operates if the pulse in negative, and a third distributor relay which operates during the break period of the impulse. The relays are arranged to be held operated until the "operate" sequence has completed.

The successive operation of these code-receiving relays causes one of the three receiver selectors to hunt for and halt on the point associated with the circuit breaker to be operated. The selector concerned actually drives while the code is still being received, though precautions are taken to prevent the wipers driving past the required point.

The eighth pulse prepared a circuit for the energisation of the breaker close or trip coils, and the breaker closes or opens when the ninth signal has been received. Auxiliary contacts of the breaker then cause the line to be polarised by rectifiers which allow current to flow in the line in one direction only.

At the control station two polarised relays are held operated by short positive and negative pulses being transmitted to line. When the line is polarised by the substation circuits, one of these relays releases and the control key handle glows steadily to indicate that the breaker has changed. The control key is now released and restored to a locking "indicate" position. The key handle is extinguished. The total time taken for the operation, from the initial turning of the control key until the key handle glows steadily, does not exceed two seconds.

Alarm-Cycle Substation. The operation of a circuit breaker by local control causes the changeover of auxiliary contacts, which in turn initiate an alarm cycle. The subsequent circuit operation is similar to the sequence of events which takes place at the control station when a control key is turned and a code is sent out over the second pair of pilot lines. The code is composed of 8 pulses, the first of which are identical with the first 7 pulses of the code sent out by control to select the breaker.

Alarm-Cycle Control Station. With the arrival of the seventh pulse at the control station, a receiver selector is positioned on the point associated with the point circuit of the breaker that has been changed. During the break period following the seventh pulse, a point circuit relay is released, one being normally operated to maintain an indication of the particular breaker condition.

The eighth pulse operates one or other of the point-circuit relays depending on whether the circuit breaker is open or closed. Operation of the circuit-breaker is indicated at the control station by the ringing of an alarm bell and the lighting of a cubicle nameplate. The control-key handle of the changed breaker flashes so that the breaker may be quickly identified.

The alarm bell is silenced and the nameplate lamps extinguished when a common "Silence Bell" push-button is depressed. The breaker key handle continues to flash until the key is turned to agree with the new indication.

Re-Alarms. When the audible and visible alarms have been cancelled by the "Silence Bell" push-button following an alarm cycle, but the panel diagram has not been "dressed" to agree with the new indication, a second alarm cycle sets in operation a chain of relays which cause a single-strike bell to sound and the cubicle nameplate to flash. These alarms are automatically cancelled after a few seconds but the affected breaker key-handle flashes until the key is turned to the correct indicate position.

Tunnel Trip Arrangements

On tunnel sections, two bare telephone wires are run along the side of the tunnel. In an emergency these wires may be clipped together to trip the two feeder breakers supplying the track. Visible and audible alarms are given at the control station if the wires are clipped and the lamp lights to indicate the "tunnel trip" conditions. Each section

of track is fed through two circuit breakers, and the possibility exists that one of the breakers may fail to trip when "tunnel trip" conditions are imposed. To give warning of this eventuality a red "track alive" lamp glows. The closed breaker can then be tripped by supervisory control.

When tunnel trip arrangements are in force, the "close operate" function of the affected track-feeder breaker keys is rendered ineffective. Should the "tunnel trip" be caused by a fault, power may be restored to the "dead" sections of track at the discretion of a responsible official. A key is inserted into a lock switch fitted on the control panel. When the key is turned, the "close operate" function of the associated breaker key is rendered effective and the track feeder breaker may be closed by supervisory control in the normal manner. If the key is removed from the lock before the emergency has ended, tunnel trip conditions are again imposed in full.

Signals Motor-Generator Sets

Normal control of the motor generator sets consists of closing the motor circuit-breaker by supervisory control. The machine runs up to speed and in due course the generator synchronises with the signals busbar. The generator circuit-breaker then closes automatically. When shutting down, the motor circuit-breaker is tripped by supervisory control and the generator circuit-breaker opens automatically. For normal starting and shutting down, therefore, supervisory control of the generator circuit breaker is not used.

Should the motor generator set be required to be connected to the busbars while they are dead, use must be made of the emergency control facility associated with the generator circuit breaker. The motor breaker is closed in the normal manner. A key is inserted into a lock switch and turned and the generator breaker can then be closed by supervisory control. (The lock switch has a contact associated with the generator C.B. control key and this key is not effective unless the lock has been operated.) Emergency control cannot be used if the busbars are alive.

Should the generator C.B. trip out due to overloading and leave the busbars alive, the motor generator set should still be running. Under these circumstances reclosing of the generator C.B. may be carried out by turning the generator C.B. control key without having first operated the Yale-type lock switch.

Railcars for the Berner Oberland Bahn

Powerful rack-and-adhesion units to reduce timings with heavier loads

Steam and electric traction on the Berner Oberland Bahn

THE Swiss Locomotive Works, Winterthur, and Brown Boveri & Company, Baden, recently have completed railcars for the metre-gauge Berner Oberland Bahn, which conveys a heavy seasonal tourist traffic between Interlaken Ost and Grindelwald and Lauterbrunnen, the latter being the changing point for Mürren and for the Wengernalp Bahn. The new cars generally are similar to, but larger than, the railcars for the 2 ft. 7 in. gauge Wengernalp Bahn described in our issue of November 5, 1948. The principal dimensions of these new railcars are:—

Length over buffers	55 ft. 9 in.
Distance between bogie centres...	35 ft. 5 in.
Width	8 ft. 9 in.
Dia. of adhesion wheels	2 ft. 7 in.
Dia. of pinion wheels	2 ft. 1 in.
Weight in working order ...	50 tons
Tractive effort	46,000 lb.

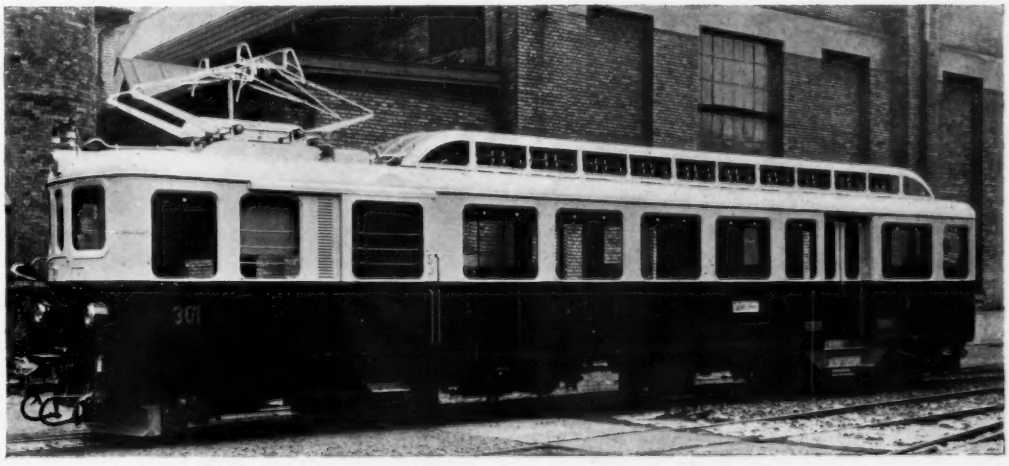
Current is 1,500 V. d.c., and each of the four motors is of 215 h.p.

Accommodation consists of a driving compartment, which includes two second class seats; guard's compartment; third class non-smoking and smoking compartments, each providing 16 seats; entrance vestibule with two second class seats; and second class compartments with eight seats; or 12 second and 32 third class seats in all. In addition there are two tip-up seats, each for two passengers, in the guard's compartment.

Each of the four axles is driven by a motor connected to one or other of the bogies by a cardan shaft with gearing and double transmission for both rack and adhesion working. Rack and adhesion transmissions are linked through the pinion wheel; the gearing is arranged to transmit equal torque to rack and adhesion wheels.

Five brakes are fitted: (*a*) electrical (regenerative and resistance) for regulating speed on heavy gradients; (*b*) Westinghouse differential, operating on the adhesion wheels of the railcar and on the

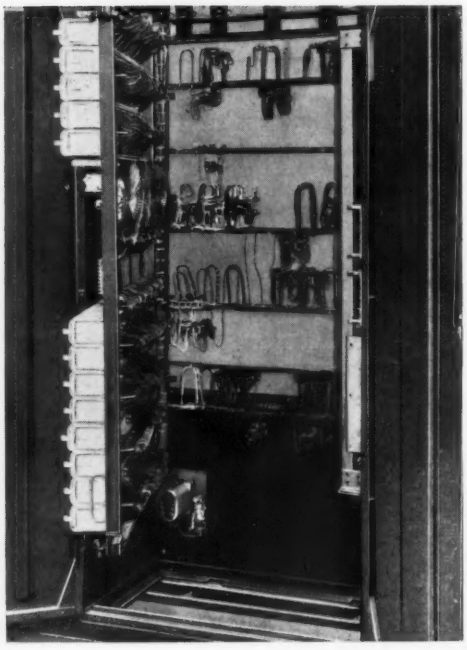
(*Continued on page* 193)



Metre-gauge rack-and-adhesion railcar for Berner Oberland Bahn

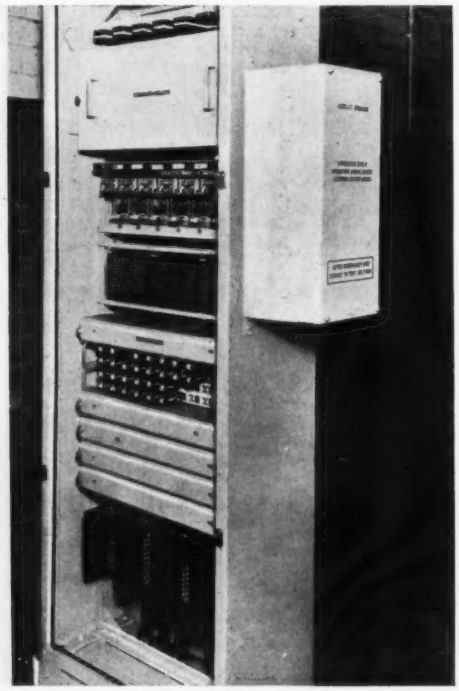
Remote Supervisory Control for London Transport N.E. Extension

(See article on page 187)

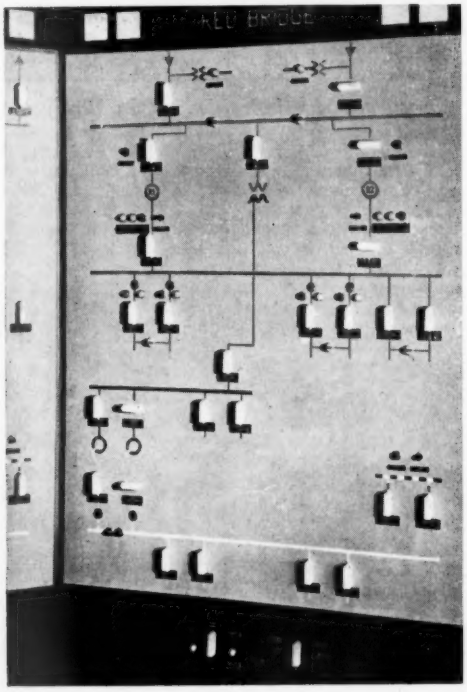


Showing the rear of cubicle installed in the control room, with gate swung open for maintenance of equipment

South Woodford local switchgear. The attendant is consulting a recording voltmeter which monitors the 22-kV. supply



Supervisory unit at Bethnal Green. A similar unit at each sub-station receives the control signals from South Woodford



View of power circuit diagram and illuminated-handle control keys on front panel of cubicle at South Woodford sub-station

RAILWAY NEWS SECTION

PERSONAL

SIR EUSTACE MISSENDEN

The appointment has been gazetted of Colonel Sir Eustace J. Missenden, O.B.E., Chairman of the Railway Executive, as Officer Commanding, Engineer & Railway Staff Corps, Royal Engineers, T.A., with effect from July 1, 1949, in succession to Colonel Sir William T. Halcrow.

Colonel Arthur Chenevix Trench, C.I.E., R.E. (retired), who has retired from his position as an Inspecting Officer of Railways, Ministry of Transport, was educated at Charterhouse and the Royal Military Academy, Woolwich. He was commissioned in the Royal Engineers in 1903, and served at home and in India, and in 1911 was appointed Assistant Electrical Engineer for the Coronation Durbar at Delhi. He underwent an electrical and mechanical engineering course in England with various engineering firms in 1912-13, and, returning to India, was in charge of the Electrical Section, Army Headquarters at Simla, from 1914-17. He was Assistant Director, and subsequently Director, of the Electrical & Mechanical Section, R.E., Mesopotamia Expeditionary Force, from 1917-20. He returned to India in 1920, and was appointed Assistant Director of Military Works (Electrical & Mechanical) at Simla, and subsequently became Deputy Chief Engineer, Military Land Scheme, at Bombay. Colonel Trench returned to the home establishment in 1925 and served as Staff Officer (Electrical & Mechanical) to the Chief Engineer, Aldershot, until 1927, when he was appointed an Inspecting Officer of Railways in the Ministry of Transport. He was made C.I.E. in 1919. He was Secretary of the Weir Committee on Main-Line Electrification in 1929-30.

The English Electric Co. Ltd. announces, in view of its expanding activities in the diesel engine field for traction, industrial and marine applications, the appointment of Mr. A. V. Wilkin as General Manager of its newly-formed Diesel Engine Division, with headquarters at Rugby. After a practical training with Sandycroft Limited, Mr. Wilkin was for some years with the London organisation of Ruston & Hornsby Limited, and in 1932 joined Belliss & Morcom Limited. In 1943 he joined The English Electric Co. Ltd. as Manager of the Diesel Engine Sales Department.

Mr. J. L. Willoughby, hitherto Assistant Secretary, has been appointed Deputy Secretary of the Road Haulage Executive.

Lt.-Colonel E. Woodhouse, O.B.E., R.E. (retired), who has retired from his position as an Inspecting Officer of Railways, Ministry of Transport, received his commission in the Royal Engineers in 1903, and took his year's railway course under Mr. Dugald Drummond on the London & South Western Railway. He was engaged on the construction of the Woolmer Instructional Military Railway at Longmoor and on the erection of the shops and machinery there, and subsequently carried out general engineering work at Hong Kong and on Salisbury Plain. He was given command of the 8th (Railway) Company, R.E., in 1913, and went with it to France in August, 1914, but was invalided home a year later. Resuming duty in August, 1916, he was, first, Deputy Assistant Director, and, later, Assistant Director of Railways in the Transportation Branch of the War Office, and in May, 1921, returned to Longmoor as Chief Technical Officer, in charge of the W.I.M. Railway and of Military Camp Railways. In 1924 Colonel Woodhouse was given command of the Royal Engineers in Sierra Leone, and in 1927 went to Headquarters, Aldershot Command, as Electrical & Mechanical Officer, going, in December, 1929, once more to Longmoor, where he was Commandant, Railway Training Centre, R.E., until his appointment in 1930 as an Assistant Inspecting Officer of Railways, Ministry of Transport. He was appointed an Inspecting Officer of Railways in 1934. He was made an O.B.E. in the New Year Honours this year.

The Minister of Civil Aviation has accepted with regret the resignation of Mr. I. J. Hayward from the board of the British European Airways Corporation, and to take his place has appointed Mr. Aubrey C. Ping, from September 1 next. Mr. Hayward is leaving the B.E.A.C. because of the increasing amount of time he finds it necessary to devote to his work as leader of the London County Council.

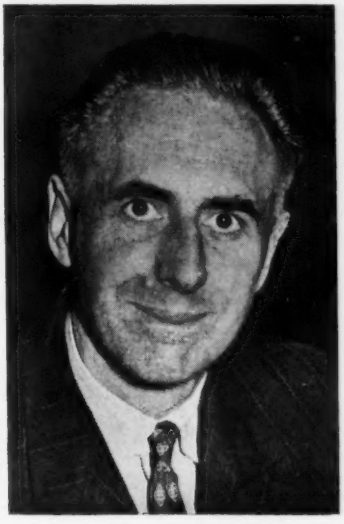
Mr. Aubrey C. Ping, who, as recorded above, has been appointed to the board of the British European Airways Corporation, has been released by the Railway Executive from the post of Assistant for Special Purposes & Development of Traffic to the Continental Superintendent, Southern Region, British Railways, to take up his new appointment. He will be given special duties in connection with labour relationships and the co-ordination of air and surface transport. Mr. Ping, who is 43, was educated at Manor Lane (Lee) L.C.C. School, and the County School, Brockley. He joined the Southern Railway as a junior clerk in 1922, and was transferred in 1934 to the Continental Department of the Traffic Manager's Office, where he specialised in problems concerning rail-associated air routes and the development of traffic facilities through the co-ordination of air and surface transport. He was a Southern Railway representative to Railway Air Services and Channel Islands Airways, and was associated with Lord Douglas, now Chairman of B.E.A.C., in his inquiry lately into the operation of section 23 of the Civil Aviation Act. In the recent war he served as Civil Affairs Officer in Italy, and in 1945 joined the Military Branch of E.C.I.T.O., becoming Assistant Director in the Rome office with the rank of Lt.-Colonel. On his release in 1947 he returned to the service of the Southern Railway as lecturer on international transport at its Staff Training College. He has been an active member of the Railway Clerks' Association since 1926, holding many voluntary offices, including that of Chairman of the South London Branch.

Colonel A. C. Trench

Inspecting Officer of Railways, Ministry of Transport, 1927-49

Lt.-Colonel E. Woodhouse

Inspecting Officer of Railways, Ministry of Transport, 1934-49



Mr. A. C. Ping

Appointed a Director of the British European Airways Corporation

Mr. John Fremantle has been appointed by the London County Council to serve as a Member of the Port of London Authority, in place of Sir Bertram Galer.

Mr. J. F. Bickerton has been appointed Assistant Divisional Engineer, Paddington, Western Region, British Railways.

We regret to record the death on August 5, at the age of 49, of Mr. Valentine St. John Killery, a Director of Imperial Chemical Industries Limited responsible for overseas affairs.

Mr. R. A. Carder, Managing Director of the Anglo-American Oil Co. Ltd., has been appointed Chairman, in succession to Mr. D. A. Shepard, who has resigned his position as Chairman to become Executive Assistant to the President of the Standard Oil Company of New Jersey. Mr. Carder remains Managing Director and is joined by an additional Managing Director, Mr. Leonard Sinclair; Mr. H. W. Page has been appointed a Director.

Sir Eustace Missenden's Visit to North Eastern Region

Sir Eustace Missenden, Chairman of the Railway Executive, accompanied by Mr. James Ness, Chief Officer (New Works) of the Executive, recently visited the North Eastern Region of British Railways. He was met at the station by Mr. C. P. Hopkins, Chief Regional Officer. Sir Eustace Missenden visited the Carriage & Wagon Works and the Railway Museum, and inspected at York Station the platform box and the new signal box now in course of construction. He was later the guest of honour at a dinner at the Royal Station Hotel, York, given for him by the Chief Regional Officer, at which were present most of the officers of the Region. On the next day he visited Tees-side, viewing on the way railway installations and industrial developments, subsequently returning to London.

The following appointments have been made to the newly-formed Film Section of the British Transport Commission, in the department of the Chief Public Relations & Publicity Officer:—Mr. John Shearman to be Assistant Producer; Mr. R. M. Craigen to be Senior Cameraman & Technician; Mr. I. D. Ferguson to be Production Manager.

Mr. A. L. Castleman, who has been Chairman of the L.M.S.R. (now British Railways, London Midland Region) Dramatic Society, since its inception in 1933, has resigned, as he feels that the chair should be occupied by an active railway officer. Mr. E. S. Hunt, who succeeded Mr. Castleman as District Goods Manager, Broad Street, on the latter's retirement from railway service, becomes Chairman of the L.M.R. Dramatic Society. At the recent annual general meeting of the society Mr. Castleman was elected an honorary life Vice-President.

The Minister of Transport has made the following appointments in the Highway Engineering branch of the Ministry:—Mr. R. J. Samuel to be Deputy Chief Engineer (Civil Engineering), in succession to Mr. E. B. Hugh-Jones (recently appointed Chief Engineer on the retirement of Mr. H. E. Aldington); Mr. A. E. N. Taylor to a new post of Deputy Chief Engineer (Traffic & Mechanical Engineering); Mr. H. S. Keep to be an Assistant Chief Engineer at headquarters; Mr. C. E. Hollinghurst to be Divisional Road Engineer, Metropolitan Division, in place of Mr. G. H. Hargreaves, who becomes an Assistant Chief Engineer at headquarters in place of Mr. Hollinghurst.

Mr. W. W. Weston, Manager of the Mechanical Department of George Spencer, Moulton & Co. Ltd., has been appointed Sales Manager of the combined Railway and Mechanical Departments of the company.

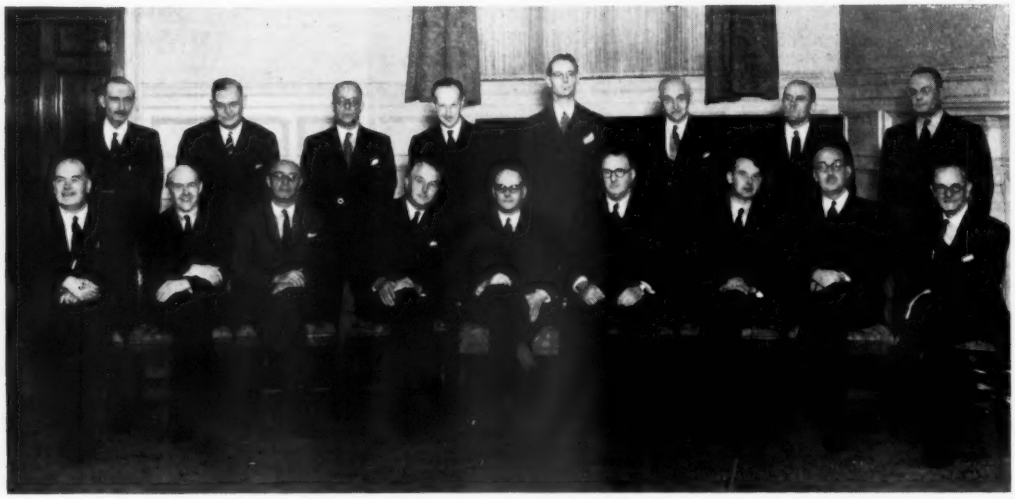
We regret to record the death, at the age of 67, of Mr. William Redpath, formerly Managing Director of the Gloucester Railway Carriage & Wagon Co. Ltd., and at one time General Manager of the Leeds Forge Co. Ltd.

The late Mr. J. A. Kay

The following is an appreciation of the late Mr. J. A. Kay, Editor of *The Railway Gazette*, 1910-49, further to those already published:—

The news of Kay's death reached me in the wilds of Tanganyika, otherwise I would have written at the time expressing my sorrow and saying how shocked I was to hear of it. Kay was, without doubt, a great personality in the transport world—he probably commanded more respect from a greater number of transport men than any other single figure, and he had the affectionate regard of most of us. *The Railway Gazette* has always stood for something in the lives of those of us who have reached senior posts in the transport world, and we have always regarded Kay as our High Priest—if a very genial one. He was probably the last of the Victorians who watched the development of transport, not only in the United Kingdom but abroad, and always kept in touch with its many ramifications. I am sure I voice the opinion of many railwaymen abroad when I say that we feel as many people felt when Queen Victoria died—a great figure has departed, and his departure marks the end of an epoch.—A. Dalton, *General Manager, East African Railways & Harbours.*

Visit of Sir Eustace Missenden to North Eastern Region



A group taken during the recent visit of Sir Eustace Missenden, Chairman of the Railway Executive, to the North Eastern Region (see accompanying paragraph)

Back row (left to right): Messrs. H. S. Cole, Chief of Police, Northern Area; F. H. Petty, Motive Power Superintendent; C. Cooper, Regional Staff Officer; S. W. Jesper, Public Relations & Publicity Officer; J. H. Fraser, Signal & Telecommunications Engineer; J. L. Meadowcroft, Area Superintendent, Eastern Area, Hotels Executive, British Transport; B. X. Jessop, Assistant Chief Regional Officer; G. Tunbridge, Regional Estate Surveyor

Front row (left to right): Messrs. A. P. Hunter, Divisional Operating Superintendent, York; E. Coleby, Solicitor, Eastern & N.E. Regions; E. W. Rostern, Operating Superintendent, Eastern & N.E. Regions; Sir Eustace Missenden; Messrs. C. P. Hopkins, Chief Regional Officer; A. H. Peppercorn, Chief Mechanical Engineer, Eastern & N.E. Regions; James Ness, Chief Officer (New Works), Railway Executive; J. Taylor Thompson, Civil Engineer; F. H. Colebrook, Stores Superintendent, Eastern & N.E. Regions

Great Northern Railway (Ireland)

Ulster Transport Authority officials are to co-operate with Coras Iompair Eireann in an investigation of the financial crisis of the Great Northern Railway (Ireland). The two undertakings will report to their respective Governments. Earlier references to the position of the G.N.R. were made in our July 29 and August 5 issues.

At a conference of railway unions in Dublin on August 4, which was addressed by Mr. G. Howden, General Manager of the railway, it was stated that the G.N.R. had sold all its liquid assets, and had £750,000 still on hand, representing commitments to the superannuation funds and to orders placed which could not be cancelled.

All workers employed by the company would receive "sometime in September" a notice stating that "as the financial position is so serious, members of the staff will be in danger of receiving a week's notice terminating employment." Dismissals would take place "on a seniority basis—last in, first out."

The unions rejected this plan, saying they could not agree to the dismissal of workers, and decided to form a permanent committee of their own to deal with the situation. After the meeting the trades unions issued a statement, saying that they were "gravely perturbed" at the failure of the two Governments to intervene actively to avert the threatened redundancy within the services.

The union representatives stated that they would exert pressure on both Governments to appoint their highest officials to investigate the problem and to recommend interim suggestions for the mitigation or postponement of the crisis "so as to give some confidence to the management of the company" that the situation would not be allowed to drift.

A trades union committee set up by the railway workers after the conference decided, after a long discussion the next day, to send Mr. Howden a letter categorically rejecting the offer by the company to vary its proposed day-to-day basis of employment to one of week-to-week employment.

The committee expressed the view that the G.N.R by its action was by-passing the negotiating machinery to which the company itself was a party and to which equally serious financial situations had been referred in the past. The committee wants the whole position referred to the negotiating machinery for discussion.

A spokesman for the committee said that it considered the situation was being gravely aggravated by the inaction of the Northern Ireland and Eire Governments and that it was considering asking both Governments to meet a deputation from the unions.

The main losses of the company appear to be in Northern Ireland, and if lines have to be closed, it is possible that Northern Ireland would be affected first. Losses in Eire are not so heavy because of the pooling arrangement between the G.N.R. and C.I.E.

Major F. A. Pope, Chairman of the Ulster Transport Authority, at a press interview on August 5, said that he frequently had talks with Mr. T. C. Courtney, Chairman of Coras Iompair Eireann, on the problem of the railway. He had asked Mr. Howden for the full financial picture of the position, and, after he had received and studied it, he would report to the Ulster Government on the matter. Mr. Courtney would do likewise and report to the Eire Government.

Asked if he and Mr. Courtney saw any solution to the G.N.R. problem, Major Pope said: "The solution we see is in agreement with the recommendations made in Eire by Sir James Milne's report last December and the recommendations made in the Northern Ireland Government's White Paper of 1946." The recommendations in both the report and the White Paper were consistent.

Major Pope added: "The matter of a solution of the G.N.R. would be easy but for the fact that the railway is in two States." The border partitioning the railway made the problem essentially one for the two Governments concerned, but so far the Governments had not been in contact with each other, and he could not say what solution they might think it wise to adopt.

Ulster Transport Authority Headquarters Opened

Since the Ulster Transport Authority commenced operations on October 1, 1948, the various branches of management have been dispersed throughout Belfast.

As from August 2, however, the Authority has been installed in its new headquarters at 21, Linenhall Street, Belfast. In these premises, consisting of a five-storey building, every aspect of transport with which the public is directly concerned will be dealt with, except the stores department, which is retaining its close association with the civil and mechanical engineering workshops to be housed finally at York Road and Dunorue Street.

In addition, for the convenience of the general public, the actual bookings for private hire and tours will continue to be effected at 24, Donegall Place, Belfast, though information on such matters will also be available at Linenhall Street.

During recent years, the existing offices of the constituent undertakings have proved totally inadequate in view of the increasing volume of business and the fact that the N.C.C. offices suffered badly from enemy action in 1941, temporary arrangements having applied ever since. Road transport in Northern Ireland was never well served for offices, as the board was formed only in 1935, and the war came before it had time to settle down properly. Consequently, when additional accommodation became a necessity, premises had to be accepted where they could be found.

The increase in the volume of traffic and the forced decentralisation created difficulties, which militated greatly against efficient working, and the new Authority therefore decided to embark on a bold scheme of integration.

On the ground floor, there will be a general inquiry and combined waiting and display room, where information relating to travel and transport generally will be obtainable. On the first floor will be the board room and the offices of the Chairman and chief officers, except the Chief Traffic Manager, who will be on the second floor with the freight and passenger managers, planning, and general offices of his department. The secretarial department will also be on the second floor.

The rates and fares office and the Accountant take up the third floor, and the fourth floor is devoted to the administrative side of engineering and hotels, the publicity section, and the administrative staff office. The fifth floor has been converted into a staff canteen.

Mr. John Benstead Visits Railway Police School

On Monday, July 25, Mr. John Benstead, Deputy Chairman of the British Transport Commission, accompanied by Mr. Frank Gilbert, Principal Staff Officer, B.T.C., visited the Railway Police School at Tadworth, Surrey, where he was introduced by Mr. W. B. Richards, Chief Officer (Police), to the School Commandant, Mr. G. V. Frankton. After inspecting the premises, which were described in our issue of December 31, 1948, Mr. Benstead addressed the students.

After referring to his connection with transport during the past 40 years, Mr. Benstead told the students that he would like them to feel as railway police that they, together with all other sections of the transport industry, were now under the umbrella of the B.T.C.

Mr. Benstead then referred to the losses of goods in transit which before the war amounted to £180,000 as compared with between £2 and £3 million in 1948. He felt sure the officers realised the great task which lay ahead of them in working together to reduce this figure. Although it was hoped the peak had been passed, there must be no relaxation of effort, and he asked the students to think of their task not only as a job they were paid to do, but also in terms of a service to the community.

The measure of their efficiency would be whether in conjunction with other sections of the service they could reduce the claims bill to reasonable terms. The knowledge the officers gained at the school would give them confidence and enable them to deal with this serious problem in a manner beneficial to the community as a whole.

Many of the students would in due course seek promotion and become sergeants and inspectors. With the instruction they were now receiving, under the direction of Mr. Frankton and his staff, he looked forward to the Railway Police becoming second to none, and a force worthy of the traditions so carefully built up by the British police.

Railcars for the Berner Oberland

(*Concluded from page* 189)

wheels of trailer cars; (*c*) pinion-wheel brake, which can be operated by the brake valve in each driving compartment for emergency use only; (*d*) hand brake in each driving compartment for emergency use only; and (*e*) an emergency brake worked by an electro-pneumatic valve on the differential brake and controlled by the deadman's handle.

Running speed is 44 m.p.h. on adhesion; and 22 m.p.h. in upward and 12-18 m.p.h. in downward direction on rack sections. Maximum loads of trailer cars hauled are 175 tons (600 passengers) on the adhesion section between Interlaken and Zweilütschinen, with a ruling gradient of 1 in 40; 118 tons (430 passengers) on the partially rack section between Zweilütschinen and Lauterbrunnen, with a ruling gradient of 1 in 11, and 74 tons (300 passengers) on the rack section between Zweilütschinen and Grindelwald, with a ruling gradient of 1 in 8½.

During the operation of the summer timetable, which is based on that of last year, the new cars are being run experimentally to afford a basis for future acceleration.

British Transport Commission Statistics

Summary of the principal statistics for the four-week period ended June 19

The first of our set of statements based on *Transport Statistics** shows an increase of 1,013 in the Commission's staff during the period to June 19; the total increase since January 1 has been 8,515.

*British Transport Commission Statistics, 1949. Series No. 6. Period to June 19. London: British Transport Commission. Price 1s.

During the first 24 weeks of the year, British Railways reduced the number of its employees by 13,209; London Transport engaged 380 more persons and Road Transport (Freight) added 17,753 to its establishment, of whom 3,640, or nearly one in five, were in administrative, clerical and supervisory grades. Figures for the Road Passenger Executive are not yet included.

In the month of May, passenger carryings were down, save in the Southern Region, the poorest results being in the Western and North Eastern Regions. In freight tonnage, all Regions, except the Southern, had substantial increases. The Eastern Region had an exceptional improvement of 26 per cent. in merchandise forwardings; the North Eastern and Scottish Regions each carried 78,000 tons more minerals than a year ago, and the London Midland, Eastern and Western Regions contributed to a larger movement of coal and coke. Table 2 (c) indicates that the Western and London Midland Regions were responsible for the greater part of the additional ton mileage accruing. The North Eastern Region, with 4 per cent. extra tonnage, actually worked a few less ton-miles. The average length of haul of minerals and coal was lower, but the train load was held at the high level of 157 tons.

Over 7 per cent. more train miles were run, with the result that freight-train speed dropped to 8·66 m.p.h. The tonnage of locomotive coal consumed was larger, as in May, but there was a gratifying fall in the lb. used per engine mile, noticeably in the Eastern Region. The rolling stock position was weakened by the loss of 5,798 wagons, and 9 per cent. of the net operating wagon stock at the end of the period was under or awaiting repair.

Inland Waterways again increased its tonnage and ton-mileage due to the activity in its North Eastern Division.

London Transport had a small increase in railway journeys, though reducing its railway car miles by nearly 3 per cent. from May.

STAFF

—	Commission's Head Office	British Railways	London Transport	Road Transport (Freight)	Hotels & Catering	Steamships Marine & Docks	Inland Waterways	Railway Clearing House	Common Services: Commercial Advertisement	Total
No. of employees ...	181	636,583	101,156	40,948	16,876	26,167	5,220	666	140	827,937
Inc. or dec.	+1	+380	+5	+371	+206	+63	−4	−10	+1	+1,013

1. BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks		Inc. or dec.	Aggregate for twenty-four weeks		Inc. or dec.
	To June 19, 1949	To June 13, 1948		1949	1948	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	9,816	9,691	+ 125	46,891	51,827	− 4,936
Parcels, etc., by passenger train... ...	2,304	2,285	+ 19	12,946	13,162	− 216
Merchandise	6,221	6,147	+ 74	38,575	39,586	− 1,011
Minerals	2,228	2,132	+ 96	13,882	13,203	+ 679
Coal & coke	5,297	4,820	+ 477	31,891	30,021	+ 1,870
Livestock	87	63	+ 24	572	432	+ 140
	25,953	25,138	+ 815	144,757	148,231	− 3,474
Steamships	914	780	+ 134	3,703	3,387	+ 316
London Transport—						
Railways	1,111	1,107	+ 4	6,720	6,766	− 46
Buses & coaches	2,534	2,510	+ 24	14,349	14,432	− 83
Trams & trolleybuses	867	883	− 16	5,059	5,193	− 134
	4,512	4,500	+ 12	26,128	26,391	− 263
Road Transport (Freight)—						
Freight charges, etc.	2,412	—	—	10,375	—	—
Inland Waterways	152	128	+ 24	919	810	+ 109
Hotels & Catering	1,054	1,048	+ 6	5,845	5,884	− 39

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of May

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Ordinary fares	1,014,000 (−28·46)	617,000 (−26·58)	1,934,000 (−12·37)	996,000 (−9·27)	126,000 (−39·54)	254,000 (−38·65)	4,941,000 (−20·12)
Monthly return	3,566,000 (−44·03)	1,484,000 (−50·50)	6,386,000 (−33·17)	3,135,000 (−31·90)	336,000 (−67·01)	806,000 (−40·16)	15,713,000 (−39·32)
Excursion, weekend, cheap day, etc.	3,837,000 (+96·51)	1,750,000 (+121·69)	3,495,000 (+308·01)	1,046,000 (+137·66)	919,000 (+118·69)	1,265,000 (+436,91)	12,312,000 (+162·26)
Workmen	5,865,000 (+7·63)	1,780,000 (−1·78)	6,650,000 (+7·65)	3,626,000 (+4·69)	939,000 (+2·78)	935,000 (−6·88)	19,795,000 (+5·18)
Other descriptions ...	1,168,000 (−22·95)	779,000 (−27·74)	1,418,000 (−19·16)	667,000 (−25·51)	262,000 (−37·20)	405,000 (−26·65)	4,699,000 (−24·37)
Season tickets	3,745,000 (+1·32)	2,235,000 (+1·65)	10,276,000 (+20·04)	4,022,000 (+15·07)	568,000 (−5·81)	1,379,000 (−16·61)	22,225,000 (+9·98)
Total	19,195,000 (−5·92)	8,645,000 (−11·03)	30,159,000 (+3·60)	13,492,000 (−3·60)	3,150,000 (−12·03)	5,044,000 (−3·12)	79,685,000 (−2·84)

(B) Freight Tonnage Originating

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise	1,314,000 (+3·56)	777,000 (−0·61)	265,000 (−10·24)	636,000 (+26·15)	484,000 (−4·77)	598,000 (+2·49)	4,074,000 (+3·35)
Minerals	1,584,000 (+3·02)	676,000 (−1·31)	113,000 (−3·58)	669,000 (−2·78)	854,000 (+10·05)	707,000 (+12·28)	4,603,000 (+3·82)
Coal & coke	4,100,000 (+8·92)	2,000,000 (+6·49)	289,000 (−3·69)	2,054,000 (+7·33)	2,445,000 (+3·93)	1,643,000 (−0·25)	12,531,000 (+5·69)
Livestock	16,000 (+60·82)	11,000 (+42·86)	3,000 (+9·09)	6,000 (+35·56)	3,000 —	21,000 (+1·50)	60,000 (+23·64)
Total	7,014,000 (+6·59)	3,464,000 (+3·32)	670,000 (−6·34)	3,365,000 (+8·18)	3,786,000 (+4·01)	2,969,000 (+3·06)	21,268,000 (+4·87)

(C) Net Ton Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise & livestock ...	182,760,000 (+1·49)	108,956,000 (+4·90)	24,152,000 (+1·13)	81,574,000 (+19·08)	48,961,000 (+5·75)	79,426,000 (−3·21)	525,829,000 (+4·19)
Minerals	135,573,000 (+8·87)	67,960,000 (+1·97)	13,268,000 (−2·37)	77,106,000 (−8·52)	31,612,000 (+1·39)	41,997,000 (+4·32)	367,516,000 (+1·95)
Coal & coke	292,465,000 (+7·37)	129,465,000 (+10·48)	26,467,000 (+1·52)	166,605,000 (+0·18)	65,527,000 (−4·59)	70,254,000 (+1·88)	750,783,000 (+4·33)
Total all classes of traffic ...	610,798,000 (+5·86)	306,381,000 (+6·49)	63,887,000 (+0·54)	325,285,000 (+1·94)	146,100,000 (−0·04)	191,677,000 (+0·21)	1,644,128,000 (+3·74)

(D) Train Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Coaching train miles—							
Steam—							
Loaded	4,466,000 (+8·25)	3,208,000 (+16·19)	1,653,000 (+13·93)	2,794,000 (+14·01)	1,018,000 (+1·95)	1,867,000 (+3·40)	15,006,000 (+10·40)
Empty	152,000 (+13·36)	146,000 (+10·11)	69,000 (+35·01)	106,000 (+9·90)	46,000 (+12·86)	66,000 (+0·59)	585,000 (+12·36)
Total, loaded & empty ...	4,618,000 (+8·41)	3,354,000 (+15·91)	1,722,000 (+14·65)	2,900,000 (+13·85)	1,064,000 (+2·38)	1,933,000 (+3·30)	15,591,000 (+10·47)
Electric—							
Loaded	451,000 (+4·93)	—	2,988,000 (+11·86)	21,000 (+0·38)	89,000 (−0·72)	—	3,549,000 (+10·51)
Empty	19,000 (−8·16)	—	79,000 (+18·88)	2,000 (+7·49)	9,000 (−13·43)	—	109,000 (+9·76)
Total, loaded & empty ...	470,000 (+4·36)	—	3,067,000 (+12·04)	23,000 (+0·93)	98,000 (−2·09)	—	3,658,000 (+10·49)
Freight train miles—							
Loaded	2,893,000 (+1·33)	1,714,000 (+9·50)	504,000 (−1·75)	1,601,000 (+2·24)	875,000 (+0·46)	1,401,000 (−1·63)	8,988,000 (+2·20)
Empty	520,000 (+2·13)	197,000 (−1·17)	16,000 (+37·73)	331,000 (+5·20)	208,000 (+4·89)	206,000 (−4·66)	1,478,000 (+1·98)
Total loaded & empty ...	3,413,000 (+1·45)	1,911,000 (+8·29)	520,000 (−0·89)	1,932,000 (+2·73)	1,083,000 (+1·28)	1,607,000 (−2·03)	10,466,000 (+2·17)
Total train miles... ...	8,501,000 (+5·28)	5,265,000 (+13·02)	5,309,000 (+11·44)	4,855,000 (+9·09)	2,245,000 (+1·65)	3,540,000 (+0·81)	29,715,000 (+7·40)

(E) Freight Train Miles per Train Hour

Region											Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish			
1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948
7·30	7·51	9·58	9·54	8·76	8·95	8·57	8·37	10·92	10·63	10·22	10·18	8·66	8·69

(F) Locomotive Coal Consumption

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Tonnage consumed ...	340,000 (+1·98)	177,000 (+8·69)	77,000 (+8·87)	192,000 (−0·53)	85,000 (+0·79)	166,000 (−1·22)	1,037,000 (+2·42)
Lb. per engine mile ...	62·69 (+1·16)	51·19 (−1·41)	53·63 (+1·42)	62·25 (−4·83)	60·75 (+0·81)	69·61 (−0·88)	60·35 (−1·08)

(G) Rolling Stock Position

—	Operating stock	Number under repair	Serviceable stock	Serviceable stock in 1948
Locomotives	20,022	3,456	16,117	16,348
Coaching vehicles	55,762	4,577	51,185	49,522
Freight wagons	1,152,221	112,282	1,039,939	1,062,419

3. INLAND WATERWAYS

Tonnage of traffic and ton-miles

—	Tonnage	Per cent.	Ton-miles	Per cent.
General merchandise	314,000	(+6·45)	5,436,000	(−3·63)
Liquids in bulk	130,000	(−0·87)	2,986,000	(−0·56)
Coal, coke, patent fuel & peat	428,000	(+9·10)	6,158,000	(+4·38)
Total	872,000	(+6·55)	14,580,000	(+0·25)

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

—	Number	Per cent.
Railways	49,022,000	(+0·43)
Buses & coaches	217,721,000	(+1·57)
Trams & trolleybuses ...	93,450,000	(−1·09)
Total	360,193,000	(+0·71)

(B) Rail and Road Car Miles

—	Miles	Per cent.
Railways	17,702,000	(+1·63)
Buses & coaches	24,518,000	(+1·57)
Trams & trolleybuses ...	8,651,000	(−1·00)
Total	50,871,000	(+1·15)

Parliamentary Notes

Royal Assent

In the House of Lords on July 30 the Royal Assent was given to the Rhodesia Railways Limited (Pensions Schemes & Contracts) Act, Southampton Harbour Act, Manchester Ship Canal Act, Dover Harbour Act, Rochdale Canal Act, Mersey Tunnel Act and British Transport Commission Act.

Questions in Parliament

Special Trains for Government Departments

Mr. F. J. Erroll (Altrincham & Sale—C.) on July 18 asked the Minister of Transport how many special passenger and goods trains had been run on British Railways for Government departments during the most recent convenient statistical period; and how much had they cost.

Mr. Alfred Barnes (Minister of Transport): I am informed by the British Transport Commission that during the week ended July 9, 1949, 153 special passenger trains and 19 special goods trains were run for Government departments. No separate accounts are kept in respect of personnel or goods carried by special trains, and, therefore, the cost to departments cannot be stated.

Mr. Erroll: In view of the very large number of such special trains, will the Minister take steps to see whether it can be reduced?

Mr. Barnes: As a matter of fact, this is a very substantial decline in special traffic compared with previous years, and it is not necessary to take special steps, because it is charged either by tonnage or tickets when the traffic comes to the station.

Railway Line Fencing

Mr. A. M. Skeffington (Lewisham West—Lab.) on July 18 asked the Minister of Transport if he would make a statement on the fatal accident to two children which occurred on the railway line between Lordship Lane and Honor Oak, London, on July 2.

Mr. Alfred Barnes, in a written answer, stated: The two children gained access to the railway from a footpath by climbing over or through an iron fence reinforced with barbed wire; it was programmed for renewal this year with concrete post and chain-mesh fencing of the latest type, although the existing type complies with statutory obligations, and trespass at this point had not been prevalent. In view, however, of these very regrettable fatalities, the work is to be done directly the materials can be obtained.

Mr. A. M. Skeffington on July 25 asked the Minister of Transport whether, in view of recent accidents, he would send official recommendations to the Railway Executive to review the railway fencing in all densely-populated areas in south-east London.

Mr. Alfred Barnes stated in a written answer: The adequacy of railway fencing, not only in south-east London but elsewhere where there are live rails, is under constant review by the Railway Executive. I do not feel it necessary to remind the Commission of its responsibilities in this matter, of which it is fully aware.

Conveyance of Soldiers' Bodies

Mr. C. Royle (Salford West—Lab.) on July 26 asked the Secretary of State for War if he was now in a position to say if any way had been found of reducing the charges for bringing soldiers' bodies home from different parts of the world.

Mr. E. Shinwell (Secretary of State for War): I am glad to say that the Railway Executive has agreed to reduce by half the sea freight charge for the conveyance of soldiers' bodies from the Hook of Holland to Harwich.

Railway Rates for White Fish

Sir David Robertson (Streatham—C.) on July 20 asked the Minister of Food what was the Government flat rate for white fish in use on British Railways; and what was the rate per cwt.

Mr. John Strachey (Minister of Food), in a written answer, stated: The flat rates agreed by my department with the Railway Executive for the carriage of white fish in Great Britain are 119s. 7d. per ton by passenger train and 48s. 8d. per ton by goods train, which are equal to 5s. 11¾d. and 2s. 5 1/5d., respectively, per cwt.

Carriage of Invalid Chairs on Railway

Mr. George Porter (Leeds Central—Lab.) on July 28 asked the Minister of Transport whether he would make similar arrangements with the British Railways, as was granted to the Service disabled, for invalids to have their invalid chairs carried free.

Mr. James Callaghan (Parliamentary Secretary, Ministry of Transport) stated in a written answer: This is a matter for the British Transport Commission, to which any representations should be made by interested associations or persons.

Mr. G. B. Drayson (Skipton—C.) on July 28 also asked the Minister of Transport if he would approach the British Transport Commission with a view to obtaining the same concession for civilian disabled as was granted to Service and ex-Service disabled persons in regard to the charges made for the transport of invalid chairs.

Mr. James Callaghan wrote in reply: I would refer Mr. Drayson to the answer I gave Mr. George Porter today.

Transport of Fat Stock

Dr. Edith Summerskill (Parliamentary Secretary, Ministry of Food) has sent a written reply to Mr. Wilfrid Roberts (North Cumberland—Lib.) concerning a question he asked on June 27. He inquired what were the comparative costs for road and rail transport of fat stock from Carlisle to a representative Lancashire town; and what were the losses in weight and the average casualty losses by the two methods of transport.

Dr. Summerskill states in her reply: The charge for road movement is related to the class of stock concerned and the distance travelled; I am sending Mr. Roberts a copy of the schedule of charges.

Payment for movement by rail is not so related, and is calculated at a flat rate of 4s. 10·69d. per animal for the entire journey. A direct comparison based on the foregoing is, however, misleading, as the rail movements are rarely door-to-door and incidental expenses are normally incurred. But it has been calculated that if 705 sheep and 50 calves were moved between Carlisle and Liverpool (as actually happened in February last, partly by rail and partly by road) the movement would cost about £88 if entirely by road and over £185 if entirely by rail.

Records of liveweight losses are not maintained. An effective check on weight losses is achieved by comparison of the estimate of dressed carcase weight ascertained after slaughter. Experience shows length of time in transit to be the principal factor affecting weight. In any movements involving rail transport, the time on rail normally accounts for the greater part of the travelling time. In the period from the beginning of 1948 until June 25, 1949, casualties during transit by rail and road from Carlisle occurred only amongst sheep: one in 4,000 became a casualty on rail, and one in 6,000 became a casualty on road.

Mr. Wilfrid Roberts on July 29 asked the Minister of Food why he did not make fuller use of road transport for fat stock from Carlisle to Lancashire towns, when the cost of such transport was much cheaper than transport by rail.

Mr. John Strachey in a written answer stated: The class and condition of livestock, the numbers to be moved, the distances involved, and the regulation of the slaughtering programme normally dictate the allocation of livestock traffic to the transport facilities available. Cost cannot be the primary consideration. In any case, however, as I explained in my reply to Mr. Roberts on July 6, the calculations in respect of a particular movement are not strictly comparable, since road charges are related to the class of stock carried and the distance involved, whereas the railway charge to the Ministry is calculated at a flat rate per head over the whole country irrespective of the class of livestock and of the distance. It does not follow from the figures quoted, therefore, that one method of transport is cheaper than another.

Electrified Lines

Colonel R. S. Clarke (East Grinstead—C.) on July 18 asked the Minister of Transport how many children had been electrocuted in the last year on live rails, other than those belonging to the London Transport Executive; and what steps were being taken to prevent children getting access to those lines.

Mr. Alfred Barnes: The answer to the first part of the question is 11 killed and 12 injured during 1948. As regards the second part, full information is given on pages 27 to 29 of the annual report of the Chief Inspecting Officer of Railways for 1948, of which I am sending Colonel Clarke a copy.

Colonel Clarke: Is the Minister aware that an expert committee recently reported that overhead transmission was more economical than live rails, and will he assure the House that no more rails will be electrified and that overhead transmission will be employed instead?

Mr. Barnes: I cannot make a pledge for the future, but in the extension of electrification to Shenfield the overhead system is being introduced.

"C" Licences

Mr. Ernest Davies (Enfield—Lab.) on July 25 asked the Minister of Transport if he would state the number of "C" licences issued during the first six months of 1949 or to the latest available date; the comparable figures for 1948; the total number of operators of "C" licences; and the number of vehicles operated by them.

Mr. Alfred Barnes: The net number of additional vehicles for which "C" licences were issued during the first six months of 1949 was 44,253, as compared with 51,572 during the same period of 1948. The total number of "C" licensed operators at June 30, 1949, was 335,846 with 634,769 vehicles.

Ferries Report

Brigadier F. Medlicott (East Norfolk—Lib. Nat.) on July 11 asked the Minister of Transport what steps he had taken to

put into operation those parts of the recommendations of the Committee on Ferries which could be dealt with by administrative, as apart from legislative, action.

Mr. L. J. Callaghan: None, Sir, as yet. The Minister of Transport is reviewing the committee's recommendations as a whole in consultation with his colleagues. He will announce their conclusions as soon as possible.

Mr. J. McLeod (Ross & Cromarty—Lib. Nat.): How soon does "as soon as possible" mean? Might I point out that this report has been in the hands of the Minister's department for about a year, and that on the last three occasions when I have put down a question I have been told that it is under consideration. How soon can we expect to get a decision?

Mr. Callaghan: In this case, I think it means in the near future.

Road Maintenance

Mr. B. Janner (Leicester West—Lab.) on July 29 asked the Minister of Transport if he would confer with the Chancellor of the Exchequer to secure an increased allocation of funds for road maintenance and repair in view of the fact that road accidents were increasing at a disturbing rate, in spite of the intense and skilfully conducted Safety First activities, due to the prevalence of extensive areas of distorted and dangerous road surfaces which had accumulated from the enforced neglect of road maintenance during the last ten years.

Mr. Alfred Barnes, in a written answer, stated: I sympathise with Mr. Janner's desire to see more money spent on road maintenance, but I have no evidence yet that the number of accidents attributed to road conditions is increasing.

Nigerian Railway Rolling Stock

Sir Ralph Glyn (Abingdon—C.) on July 13 asked the Secretary of State for the Colonies how far had the requirements of the Nigerian Railway been met for locomotives and rolling stock; and if the capacity of the system was now adequate to handle the traffic by the anticipated dates.

Mr. D. R. Rees-Williams (Under-Secretary of State for the Colonies): Sixty out of 96 main-line locomotives ordered for the Nigerian Railway since the war have arrived in Nigeria. Wagons delivered number 432, and the delivery of a further 637 wagons and wagon bodies is due to be made during the year. This large quantity of new equipment should enable the railways to meet their increasing commitments.

The Reverend R. W. Sorensen (West Leyton—Lab.): Have any steps been taken to double the track?

Mr. Rees-Williams: No. Sir.

Mr. J. Harrison (Nottingham East—Lab.): What is the source of most of the rolling stock supplied? Has it come from this country?

Mr. Rees-Williams: Almost entirely from this country. There were a few engines from Canada, but it was mainly supplied from this country.

Strike on Nigerian Railway

Sir Ralph Glyn on July 28 asked the Secretary of State for the Colonies whether he had any statement to make in regard to the strike of workers employed on the Nigerian Railway; and how far that stoppage had affected the movement of groundnut consignments to the coast.

Mr. A. Creech Jones (Secretary of State for the Colonies) in a written answer stated: A strike of railway station staff began without warning on July 17. As the terms of service of station staff were at the time subject to a Government inquiry, the Nigerian Government announced that further consideration would not be given to the questions at issue until work was fully resumed. The strikers were warned that they had broken their contracts of service and were advised in their own interests to return to work immediately. Subsequently a meeting was held between representatives of the Government and of all the railway unions, in consequence of which all the unions ordered an immediate resumption of full work. There has been a general response to this order. No accurate estimate can yet be given of the drop in groundnut railings, but the total figure for the month is expected to fall below 30,000 tons, as against a previous estimate of 36,000 tons.

Staff & Labour Matters

Railway Wage Claim

The Board of Conciliation set up by Mr. George Isaacs, Minister of Labour, to go into the question of rates of pay and conditions of service in the railway industry held its first full meeting in London on August 8. Sir John Forster was in the chair. Further meetings have been held each day since, and at the time of going to press, the talks were still going on.

The main subject for consideration at the present time is the claim by the National Union of Railwaymen for a general wage increase of 10s. a week and time-and-quarter pay for Saturday afternoon work. In the event of failure to agree the board is empowered to make recommendations which all parties have agreed to accept. The case of the railway shopmen will be considered separately because of the objection of the Confederation of Shipbuilding & Engineering Unions to the original terms of reference of the board.

At a meeting of 200 railwaymen in London on August 8 a resolution recommending "work to rule" action to enforce their wage claims was defeated by a narrow margin. The meeting was called by the London District Council of the N.U.R. representing about 50,000 workers and, after a discussion lasting 2½ hours, the meeting finally voted for an amendment which became the substantive motion that "this mass meeting notes the decision of the special general meeting in accepting the Board of Conciliation as set up by the Ministry of Labour.

"Further, in view of the meeting of the board being held this week, we recommend that, failing a decision being reached by August 22, a meeting of the branch chairman, secretaries of local departmental committees and shop committee spokesmen be held on that date to consider our future action."

It was also decided that, in the event of a decision being reached by the board before that date, a meeting would be held to consider the findings of the board.

Railway Ships Officers

The Industrial Court has awarded new scales of pay to navigating and engineer officers in the service of the Railway Executive, including officers employed in railway-managed B.A.O.R. leave ships. The new schedule, which comes into operation at the beginning of the next pay period after July 28, prescribes rates of pay in both passenger and cargo vessels of 1,001 to 2,000 tons gross; 2,001 to 3,000 tons; and 3,001 tons gross and over respectively.

Except for third navigating officers and fourth engineer officers, for whom there are fixed rates of pay according to the size of the ship, increments are provided after three years and six years of service.

In passenger vessels, rates for navigating officers range from £9 9s. a week as a starting figure for a second navigating officer in a vessel of 1,001 to 2,000 tons, to £11 10s. 9d. a week for a first navigating officer with six years of service in a vessel of 3,001 tons or more. Rates for engineer officers in passenger vessels range from £9 9s. a week for a new third engineer to £13 7s. 6d. a week for a chief engineer having served six years.

In cargo vessels, the rates for navigating officers range from £8 2s. 2d. to £10 5s. 1d. a week, and for engineer officers from £8 2s. 2d. to £11 18s. 4d. a week.

The Court has also awarded that the agreement under which navigating officers and chief, second, and third engineers employed in railway passenger vessels of a speed of 15 knots and over receive 15s. a week "speed money," shall be extended to officers of the same categories employed in railway cargo vessels of 15 knots and over.

The award applies to 425 navigating and engineer officers employed by the Railway Executive in 55 passenger, train-ferry, and cargo vessels operating services to and from the Continent, Ireland, and the Channel Isles.

Glasgow Fair Holidays

Scotland had its greatest travel day of the year on Saturday, July 16, when nearly 100 cities, towns and villages in Scotland were on holiday and Glasgow, with its population of over 1½ million, headed the mass movement. Though the traditional exodus from Glasgow presented the usual problem of forecasting the flow of traffic out of the city, the arrangements made, proved satisfactory.

On Thursday, July 14, the traffic was comparatively light, and the peak was not reached until Friday evening/Saturday morning of July 15 and 16. Long-distance relief and special trains numbering 10 on Thursday, 37 on Friday, and 59 on Saturday, were run from the main-line stations in Glasgow. These special and relief trains served London, the Midlands, North Wales, and East and West Coast resorts in England; as well as Aberdeen, Oban, Inverness, Thurso, and Wick. The local services to the Clyde and Ayrshire Coasts and to the Lothians and Fife were considerably augmented, and to relieve congestion at the City stations a programme of direct services to Scottish and English holiday centres was provided from the outer fringe of Glasgow, and from a considerable number of Lanarkshire and Dumbartonshire stations.

CANADIAN PACIFIC TAX ALLOWANCE.—The holders of Canadian Pacific Railway Company ordinary capital stock resident in Great Britain and Northern Ireland are advised that credit in respect of the Canadian tax applicable to the dividends of the company is allowable for the year 1948-49 against the United Kingdom income-tax chargeable on those dividends. The rate to which credit may be claimed on the dividends is 7s. 3d. in the £ (which takes account of the Canadian non-residents tax of 15 per cent.), or the stockholder's personal rate of United Kingdom income-tax, whichever is less.

Notes and News

Railway Draughtsmen Required.—British Timken Limited of Birmingham have vacancies for railway draughtsmen. See Official Notices on page 199.

Tyne Improvement Commission.—Applications from qualified persons are invited for the position of Chief Engineer with the Tyne Improvement Commission. See Official Notices on page 199.

General Manager Required.—Applications are invited for the post of General Manager required by a firm of locomotive manufacturers on the north-east coast. See Official Notices on page 199.

Western Australian Government Railways.—Applications are invited from qualified engineers with railway experience for the position of Assistant Chief Mechanical Engineer with the Western Australian Government Railways. There are other vacant positions on the professional staff for both mechanical and civil engineers. See Official Notices on page 199.

Amenities for Sleeping Car Passengers.—Arrangements have now been made for morning tea and biscuits to be provided on request to sleeping car passengers—both third and first class—travelling on any of the British Railways regular sleeping car routes. As soon as supplies can be obtained arrangements will also be made for liquid soap containers and small cotton towels to be provided in all third class sleeping cars.

Collision at Euston Station.—Thirty-three persons were injured, but none seriously, on August 6, when the 8.35 a.m. Euston to Manchester train standing at Platform 13 and crowded with holiday-makers, was struck by the empty 8.30 a.m. Euston to Liverpool train, which was entering the station. The end coaches of the Manchester train were pushed against the buffer stops and two dining-cars were derailed. Four main-line holiday trains were cancelled, including the 10.50 a.m. to Blackpool and 11.08 a.m. relief to Llandudno; other trains were delayed for an hour. The official inquiry is to be opened at Euston Hotel on August 16.

Model Engineer Exhibition.—The 1949 Model Engineer Exhibition will be held at New Horticultural Hall, Vincent Square, Westminster, London, S.W.1, between August 17 and 27. The official opening will be at noon on August 17 and thereafter the exhibition will be open between 11 a.m. and 9 p.m. Most of the exhibits will be in the competition section, in which amateurs compete for cups and prizes awarded for precision and ingenuity. Among other features of the exhibition will be a section for the display of exceptional models, and a junior section for exhibitors under seventeen years of age, as well as trade stands.

L.M.R. Traffic Control Scheme Complete.—With the absorption of the Lancaster and Gowhole district control offices into the district operating superintendent's control room at Preston and Derby, respectively, the traffic control scheme of the former L.M.S.R. is now complete. Thus has come into full operation an organisation to improve the running of some 9,000 passenger and 12,000 freight trains a day over the London Midland Region. The Operating Superintendent, London Midland Region, has divisional operating superintendents at Manchester, Derby, and Crewe, and the previous 42 control offices have been merged into 19 district offices, in charge of district operating superintendents, who make instantaneous contact with station masters, engine and carriage sheds, goods marshalling yards, and signal boxes in their areas.

Vickers Limited Dividend.—At a meeting of the directors of Vickers Limited on July 21, dividends were declared in respect of the year 1949 at the rate of 2½ per cent., actual, less income tax, on the preferred 5 per cent. stock, 2½ per cent., actual, less income tax, on the 5 per cent. preference stock, and £1 19s. 3½d. net per £100 stock on the cumulative preference stock. The payment of these dividends will be made on August 19.

Road Haulage Original Permits.—The Road Haulage Executive announces that the total number of applications received for original permits to operate beyond the 25-mile limit in accordance with the provisions of the Transport Act, 1947, is 17,272, and that the lists are now closed. These applications will be dealt with as quickly as possible and there is no need for hauliers to take any further action until they hear from the Road Haulage Executive.

National Airways Increased Traffic.—Figures given in the *Board of Trade Journal* for August 5 show that the three national airways corporations together carried 718,000 passengers from April, 1948, to March, 1949; 15 per cent. more than in the previous year. During the year, the corporations carried 8,600 tons of freight, an increase of 53 per cent., and 4,600 tons of mail. Passenger-miles flown totalled 565,000,000 and freight-ton-miles were 16,000,000.

Cheap Excursions from Glasgow.—A programme listing all special excursion services and facilities available from the principal Glasgow stations during August has been issued by British Railways. The publication gives information in connection with excursions being run on various dates in August to such places as Girvan, Dundee, Aberdeen, certain Fife Coast stations, Berwick, Newcastle, and Whitley Bay. Included in the programme are particulars of cheap day excursions to Clyde Coast and Loch Lomond piers, and summertime day return tickets and run-about tickets for train and steamer are also featured.

National Staff Council for the Road Haulage Industry.—On July 28 an agreement was signed between the Road Haulage Executive and the trade unions concerned providing for the establishment of a National Staff Council and three National Joint Negotiating Committees. The function of the committees will be to settle by negotiation the terms and conditions of employment of staff with basic rates of salary scales up to and including £630 a year. The agreement, further reference to which is made in an editorial note in this issue, was signed on behalf of the Road Haulage Executive by Major-General G. N. Russell, Chairman, Mr. Harold Clay, Member, and Mr. S. E. Raymond, Chief Staff & Welfare Officer, and by the following on behalf of the unions:—Amalgamated Engineering Union, Mr. Jack Tanner and Mr. Ben Gardner; Electrical Trades Union, Mr. Frank Foulkes and Mr. W. C. Stevens; National Union of Vehicle Builders, Mr. H. Halliwell and Mr. J. C. Hamilton; Railway Clerks' Association, Mr. Percy Morris and Mr. P. T. Heady; Scottish Horse & Motormen's Association, Mr. John Brannigan; Transport & General Workers' Union, Mr. Arthur Deakin and Mr. A. E. Tiffin; United Road Transport Workers' Association of England, Mr. H. Ashcroft.

Canadian National Railways.—Notice has been given that the Canadian National Railways 5 per cent. Guaranteed Bonds, due October 1, 1969, will be redeemed at 105 per cent. on October 1, 1949.

International Railways of Central America.—The Directors of the International Railways of Central America have announced that consideration of the dividend on the 5 per cent. Cumulative Preferred Stock has been deferred until a later date.

Tecalemit Limited.—The directors of Tecalemit Limited propose to increase the authorised capital of the company from £750,000 to £2,500,000 by creating 1,000,000 preference shares of £1 each and a further 3,000,000 shares of 5s. It is proposed to capitalise £556,968 by issuing to stockholders one new share of 5s. fully paid for each stock unit of 5s. held on August 17. The proposed bonus issue and also the issue of 700,000 preference shares has been sanctioned by the Treasury. If market conditions are favourable these shares will be offered to existing stockholders on terms to be decided at the time of issue.

Trade Agreement with Brazil.—The Board of Trade announces that as a result of discussions in Rio de Janeiro between representatives of H.M. Government and representatives of the Brazilian Government notes were exchanged on August 4 confirming agreement reached on schedules of trade in 1949. The two Governments undertake, subject to agreement on price and quality and bearing in mind the basic principle of reasonable equilibrium in current sterling payments in both directions, to do everything possible to grant the necessary export and import licences for the goods listed in the trade schedules. The agreement relates to 1949, but will be automatically extended for a further three months, unless either Government gives notice to the contrary by November 30, 1949. The schedules of trade between the United Kingdom and Brazil provide for United Kingdom exports to the value of £30,775,000. Supplies of petroleum and petroleum products to Brazil are expected to be maintained at about £7½ million. The programme of exports to Brazil includes coal, iron and steel, and non-ferrous metal manufactures, chemicals, machinery, vehicles, and other consumer goods. The total estimated United Kingdom exports for 1949—£30,775,000—compare with exports of £26 million in 1948.

British Insulated Callender's Cables.—At the annual general meeting of British Insulated Callender's Cables Limited on July 22, the Chairman, Sir Alexander Roger, said that profit on trading, investment income, and special receipts amounted to £4,517,882, which was a substantial improvement on the previous year. This was the result of a much higher turnover due in part to better supplies of raw materials. Taxation absorbed about 53 per cent. of the profits. There was a widespread misunderstanding, sometimes deliberate, about the margin of profit available to those who ventured their capital in industrial enterprises. In their own case, 25 per cent. of every £1 of sales went to their employees in wages, pensions, etc., while the amount needed for taxation was almost twice that available for dividends and reserves. Turn-

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

RAILWAY DRAUGHTSMEN required for design of Roller Bearing Axlebox equipment for Locomotives and Rolling Stock.—Please apply by letter to British Timken Ltd., Cheston Road, Aston, Birmingham, 7.

His Majesty's Colonial Service

COLONIAL ENGINEERING SERVICE

VACANCIES exist for Assistant Engineers (Capital Works) in the Civil Engineering Branch of the Nigerian Railway. Candidates should preferably be under 40 and they should also preferably be Corporate Members of the Institution of Civil Engineers or hold qualifications which exempt them from Sections A and B of the A.M.I.C.E. examinations. They should have had some years' experience of railway civil engineering, particularly bridge work, and some experience of general reinforced concrete construction. The appointments will be on contract for one tour in the first instance, at a point within the salary scale £720 per annum to £1,300 per annum (inclusive of expatriation pay). Salary will be determined by qualifications, experience and length of approved war service. Expatriation pay is payable on leave and other conditions of service include free first class passages once each way each tour for the officer and his wife; home leave on full pay at the rate of one week in the United Kingdom for each month of resident service; tours of eighteen months approximately; accommodation provided, usually a furnished house, at moderate rentals; outfit allowance of £60 on first appointment; gratuity on satisfactory termination of the contract at the rate of £25 for each three months of completed service, including leave periods. Intending candidates should apply at once, giving brief details of age, qualifications, experience, and war service, and mentioning this paper, to: THE DIRECTOR OF RECRUITMENT (COLONIAL SERVICE), Sanctuary Buildings, Great Smith Street, London, S.W.1, quoting reference number 27333/6/49.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages. 9 in. by 12 in. fully illustrated. Paper cover. 5*s*. By post 5*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffics, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1*s*. Post free 1*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE RAILWAY HANDBOOK provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers. Price 5*s*. By post 5*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Western Australian Government Railways

VACANCIES FOR PROFESSIONALLY QUALIFIED ENGINEERS (MECHANICAL AND CIVIL)

APPLICATIONS for vacant positions on the professional staff of above railways in the grades indicated below are invited from qualified engineers with railway experience.

Mechanical Engineers

Assistant Chief Mechanical Engineer. Salary range £1,000-£1,100-£1,200 per annum

Successful applicant must have proved administrative ability and be capable of taking over control of the Mechanical Branch in the absence of the Chief Mechanical Engineer. Proved designing experience on all classes of railway rolling stock and knowledge of modern workshops practice also essential.

	Salary range per annum
Engineer Class II.	£792-£817-£842
Engineer Class III.	£724-£749-£774
Assistant Engineer Class I. ..	£655-£686
Assistant Engineer Class II. ..	£608-£628
Assistant Engineer Class III. ..	£563-£583

Applicants to state full technical qualifications and experience in design of locomotives, or cars and wagons, or internal combustion (including diesel) traction, or general plant engineering experience.

Civil Engineers

	Salary range per annum
Engineer, Class I. (General)	£861-£886
Engineer, Class I. (Bridging)	£861-£886
Assistant Engineer, Class I.	£655-£686
Assistant Engineer, Class II.	£608-£628
Assistant Engineer, Class III.	£563-£583

Applicant to state full technical qualifications and experience on either railway civil engineering or bridge design and construction.

GENERAL

The minimum qualification for position of Assistant Engineer, Class II., and higher positions, is the standard required for admission as Associate Member of the Institutions of Mechanical or Civil Engineers or accepted equivalent. The minimum for Assistant Engineer Class III. is matriculation to a recognised university or accepted equivalent. Employment will be governed by the Award of the Commonwealth Court of Arbitration to the Association of Railway Professional Officers of Australia. For all positions except Assistant Chief Mechanical Engineer, salaries are subject to basic wage fluctuations and also carry at present an additional £8 per annum war loading. The Award contains liberal provisions for annual and long service leave, paid sick leave, etc. Officers are eligible to join Government Superannuation Scheme. Advancement in salary is yearly, at increments shown, subject to satisfactory service. Passage to Western Australia will be arranged for successful applicants and dependants and half-pay allowed from time of departure from United Kingdom to arrival in Western Australia. Appointees will be required to leave for Australia as soon as passage can be arranged, also to enter into an agreement to remain in the service of the Railways Commission for three years. Departmental medical examination, covering physical fitness, vision, etc., must be passed and will be arranged before leaving United Kingdom. Applications (in duplicate) should be addressed to the Agent General for Western Australia, Savoy House, Strand, London, W.C.2, and reach him not later than 14th September, 1949. Applications must be accompanied by copies of three testimonials as to character and include a clear and concise statement of age, nationality, marital state, dependants, academic qualifications and experience, also war service (if any).

Tyne Improvement Commission

THE Tyne Improvement Commissioners invite applications from qualified persons for the position of Chief Engineer in succession to the late Mr. A. L. Harvey, M.I.C.E. Applicants must be Members or Associate Members of the Institution of Civil Engineers and should have had comprehensive experience in responsible positions in dock and harbour construction and maintenance and should have mechanical engineering experience of dock and harbour plant. The Chief Engineer will be responsible for the designing and execution of all the engineering works of the Commissioners as well as the supervision of the carrying out of large new works by contract and of smaller works undertaken departmentally. The person appointed will be required to reside in the district and devote himself exclusively to the service of the Commissioners. Salary—£1,750 per annum, rising by annual increments of £100 to a maximum of £1,950 per annum. The person appointed will be subject to the provisions of the Commissioners' Superannuation Scheme. Applicants must not be less than 35 years of age and not more than 50 years of age on the 1st September, 1949. Applications, in an envelope endorsed "Chief Engineer," with details of training, qualifications, previous employment and present position accompanied by copies of three recent testimonials and a medical certificate should be addressed to the undersigned by not later than the 23rd September, 1949. Canvassing will be a disqualification. By Order, J. K. McKendrick, Secretary.

Tyne Improvement Commission,
Bewick Street,
Newcastle-upon-Tyne, 1.
3rd August, 1949.

APPLICATIONS are invited for the post of GENERAL MANAGER of an old-established firm of Locomotive Manufacturers on the North-East Coast. Applicants, who should preferably be not over 45 years of age, should be Corporate Members of the Institution of Mechanical Engineers, and should have thorough knowledge of the manufacture of Steam, Diesel, and Electric Locomotives for Main Line and Industrial Users. Salary will be in accordance with qualifications and experience. Applicants are requested to give details of age, general and technical education, qualifications, previous positions held, war service (if any) and to supply names of persons from whom references may be obtained. For the purposes of the Staff Pension Scheme, the successful applicant will be required to pass a medical examination before appointment is confirmed.—Box 422, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s*. By post 2*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

BRITISH WORK ON PERSIAN RAILWAYS. The achievements and difficulties of the R.Es. during the 15 months in which they laid the foundation for effective aid to Russia. Reprinted from *The Railway Gazette*, February 2 and 16, 1945. Price 1*s*. Post free 1*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Method. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. Price 20*s*. By post 20*s*. 6*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

---

over was higher last year by 41.5 per cent., home sales being up by 29 per cent. and export sales by 86 per cent., this remarkable figure being due largely to increased production. Direct export amounted to £10 million. While demands for their products remained satisfactory on the whole, the position had changed in the past year, and increasingly rigid import restrictions were being imposed by more and more countries.

Strike of Wagons-Lits Staff.—A strike of four thousand employees in France of the International Sleeping Car Company began on August 8. The strikers' demands include wage and bonus increases and the same annual holidays as those granted by the French National Railways. The Company states that there will be no negotiations until work is resumed. On August 9 the Pullmans on the "Golden Arrow" between Calais and Paris were replaced by ordinary first class coaches without a restaurant car. Passengers could obtain packed meals at Calais and Paris. The sleeping cars on the Dover-Dunkirk night ferry have been replaced by ordinary coaches. Travellers who have reserved sleepers will be provided with couchettes, or first or second class seats in the trains for which they have booked.

New Ticket-Booking Facility.—As from August 8, passengers applying at certain Eastern Region suburban stations in London, have been able to book tickets for journeys commencing at any of the London termini. The classes of ticket covered by this arrangement are first and third class ordinary single and return tickets and monthly return tickets. Following the handing over of certain suburban lines to the London Transport Executive, the Eastern Region established offices for the collection of parcels at certain London Transport Executive stations and the function of these offices has now been extended to booking tickets, dealing with passenger travel inquiries and arranging reservation of seats from Eastern Region termini. These parcels offices are also now to be equipped with ticket stocks enabling them to book tickets for journeys commencing at all London termini.

Institute of Transport Telephone Number.—As from tomorrow (August 13) at 1 p.m., the telephone number of the Institute of Transport will be changed to Langham 5216.

Firth Brown Tools Limited.—At the second annual general meeting of Firth Brown Tools Limited, whose financial results were given in our June 17 issue, the Chairman, Lord Aberconway, said that the very large sum set aside for taxation was partly a reflection of the unbearably high level of taxation and partly due to the desirability of using current trading conditions to provide for taxation next year. New capital was being used for maintaining the competitive quality of their production machinery. It was to the enterprise and willingness to take risks displayed by such executive boards of directors that this country owed so much of its industrial progress and its

recovery from the effects of war. The present irresponsible call for the nationalisation of so many industries meant inescapably their conversion to some form of bureaucratic control, which, inherently lacking in ability to promote close human industrial relations to assume the responsibilities of enterprise, was the negation of good management.

Derailment at Stenhousemuir.—Passengers were thrown to the floors of compartments when the front portion of the Scottish Region 9.25 a.m. Aberdeen to Glasgow relief train left the line at Stenhousemuir, Stirlingshire, on August 8. No one was injured, but rolling stock was damaged and trains were held up for more than an hour.

Scottish Machine Tool Corporation Limited.—The trading profits of the Scottish Machine Tool Corporation Limited for the year ended March 31, 1949, amounted to £126,921, and interest on tax reserve certificates credited £310. After providing for depreciation, fees, and £56,000 for taxes, the net profit was £33,374. Patterns and drawings absorbed £10,000. The dividend is maintained at 8 per cent. by a final dividend of 5 per cent., leaving £41,799 to be carried forward.

Edgar Allen Report.—The profit of Edgar Allen & Co. Ltd. for the year ended April 2 amounted to £429,042, as compared with £427,327 in the previous year, while taxation absorbed £228,000, against £223,500. With £106,534, against £145,000, allotted to reserves, and £50,000 (nil) to pensions, the ordinary dividend, limited to 12½ per cent. as before, is supplemented this year by a bonus of 5 per cent. The directors are considering restoring the paid-up value of the ordinary shares to £1 each from the 13s. 4d. at which they were written down in 1935.

Liverpool Overhead Traffics.—With the exception of the week ended July 17, Liverpool Overhead Railway receipts have shown a number of advances in the month of July. The largest increase was in the week ended July 3, when traffics at £3,139 were £402 above those for the equivalent week of 1948. At July 31, aggregate receipts for the 30 weeks were £82,592, as compared with £82,732 last year; the advances during the current month have improved the position by £685 since June 26, when aggregate traffics were down by £825.

Silicone Rubber Development.—During the last few years a new elastic material has been developed which will operate at higher and lower temperatures than has hitherto been possible with natural and synthetic rubbers. This material has reasonable resistance to oil and certain chemicals although it has low tensile strength, which disadvantage can be overcome to some extent, however, by reinforcing the material with glass fabric where the application allows. The firm of George Spencer, Moulton & Co. Ltd., which supplies specialist articles to the railway, aircraft, and motorcar industries, commenced development work on this material as soon as it was available, and during the past two years the firm has produced an increasing number of goods in Silastic. At present there is a certain limitation in the size of the articles which can be fabricated, because special plant is required for vulcanisation, but, with expanding output, this will be overcome in due course.

Railway Stock Market

Stock markets opened with a further heavy slump in British Funds, the persistent fall in 3½ per cent. War Loan dominating sentiment, bringing down with it all the long-dated stocks. At the time of writing War Loan is only slightly above the low level of 93¼ touched in 1940. There has been steady selling of 3 per cent. Gas stock, which moved down below 90, after the news that a further batch of this stock is being issued as nationalisation compensation. Transport 3 per cent. (1978-88) also fell heavily to 89½ and other Transport stocks moved with the general trend and were also at new low levels. There has been steady selling and a good deal of switching from long to short-dated stocks, but the volume of selling was much smaller than might be deduced from the fall in prices, except, perhaps, in the case of 3½ per cent. War Loan. The latter is regarded in the market as a long-dated stock because there is now considered to be little prospect of redemption in 1952. Industrial shares were relatively steady and moved narrowly, though there was demand for dollar stocks and shares of companies which are dollar earners or have important American interests.

There has been rather more business in foreign rails, and speculative buying of United of Havana 1906 debentures was again in evidence, the price rising sharply to 15 before receding to 14. Antofagasta ordinary firmed up to 7½ and the preference stock was 45½. Canadian Pacifics reflected the better trend in dollar stocks and satisfaction with the maintained 2 per cent. interim dividend. The directors emphasise, however, that the heavy disproportion between expenses and revenue has continued, and that no relief has yet been given in respect of the application for increased freight rates. Consequently the interim dividend is paid wholly from other income of the company. Last year the total dividend was 5 per cent. Whether it will be possible to maintain this total will apparently depend on whether the application for higher freight rates is granted. Canadian Pacific 4 per cent. preference stock has eased further to 58½ and the 4 per cent. debentures to 99½.

Apart from the ordinary and preference, stocks of the Leopoldina had a steadier appearance, the ordinary at 7¼ and the preference at 26½ being lower, though the 4 per cent. debentures changed hands around 91 and the 6½ per cent. debentures were 138. Leopoldina Terminal 5 per cent. debentures were 108 and the ordinary shares 3s. 4½d. Great Western of Brazil have been firm at 140s., but San Paulo ordinary stock, at 126½, moved lower on balance. Manila "A" debentures eased to 87 and the preference shares to 6s. 7½. Beira Rail bearer shares were 50s. 9d. Mexican Railway 4 per cent. debentures were 42½, Nitrate Rails shares kept at 60s., and Central Uruguay ordinary stock eased to 11¼.

There was little business in road transport shares, and B.E.T. deferred stock, after the rally which followed the meeting, have reacted to £1,530. Lancashire Transport were 81s. 3d., West Riding 73s. 9d., Southdown 116s. 3d., and Scottish Motor Traction 97s. 6d.

The record steel output helped sentiment in regard to iron and steel shares. Buyers came in for Guest Keen, which rallied to 37s. 9d., and Babcock & Wilcox recovered to 57s. Owing to surrounding market conditions, the underwriters had to take up a large proportion of Babcock & Wilcox new shares, and the new ordinary were at a discount of 1s. in initial dealings; but buyers later came in and a premium of 6d. was established. United Steel were firmer at 26s. 6d., and Dorman Long, on the second stage of the development plan, kept firm at 55s. Vickers were 27s. 4½d. and Cammell Laird 5s. ordinary 6s. 9d. Interim dividends of Vickers and Cammell Laird are due shortly, but they are expected to be reduced on this occasion, as they will be payable on doubled capital resulting from the 100 per cent. share bonuses.

Locomotive building and engineering shares moved narrowly during the week. Gloucester Wagon were 43s. and North British Locomotive 18s. Beyer Peacock were easier at 18s. 3d., with Vulcan Foundry at 17s 6d., and Wagon Repairs 17s.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1947/48	No. of week	Aggregate traffics to date: Total 1948/49	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Central America	Antofagasta... ...	811	31.7.49	78,950	+ 22,100	30	2,045,660	+ 415,930
	Costa Rica	281	Apr., 1949	35,603	+ 17,224	43	357,292	+ 46,562
	Dorada	70	June, 1949	21,562	— 14,938	26	170,605	+ 28,405
	G.W. of Brazil ...	1,083	21.5.49	19,200	— 10,600	20	755,800	+ 1,200
	Inter. Ctl. Amer. ...	794	June, 1949	$1,141,887	+ $73,006	26	$6,590,515	— $475,619
	La Guaira	22¼	June, 1949	$95,586	— $20,726	23	$651,515	+ $11,222
	Leopoldina	1,902	28.5.49	43,288	+ 3,864	21	965,094	— 155,382
	Nitrate	382	31.7.49	21,484	+ 4,092	30	260,651	+ 86,088
	Paraguay Cent. ...	274	29.7.49	£135,553	+ £39,592	4	£576,789	+ £126,659
	Peru Corp. ...	1,059	July, 1949	226,454	+ 47,512	4	226,454	+ 47,512
	Salvador	100	Apr., 1949	c182,000	— c7,000	43	c99,755	+ c10,735
	Taltal	154	June, 1949	11,855	+ 3,085	48	111,610	+ 13,820
	United of Havana ...	1,301	11.6.49	$231,311	+ $14,746	49	$13,733,928	— $4,659,951
Canada	Canadian National...	23,473	June, 1949	10,147,250	+ 220,250	26	59,193,500	+ 2,077,500
	Canadian Pacific ...	17,037	June, 1949	7,267,250	+ 380,750	26	43,809,000	+ 3,601,500
Various	Barsi Light* ...	202	July, 1949	40,822	+ 7,522	17	134,002	+ 19,995
	Beira	204	Feb., 1949	104,917	— 6,180	22	589,461	+ 9,141
	Egyptian Delta ...	607	31.5.49	19,952	+ 791	9	117,539	+ 7,306
	Gold Coast ...	536	June, 1949	250,878	+ 43,158	13	705,477	+ 44,904
	Mid. of W. Australia	277	May., 1949	31,123	+ 2,035	44	321,500	+ 53,067
	Nigeria	1,900	May., 1949	405,849	+ 8,949	8	845,438	— 43,716
	South Africa ...	13,347	16.7.49	1,477,287	+ 130,837	15	22,452,661	+ 2,395,772
	Victoria	4,774	Apr., 1949	1,444,898	+ 47,689	43	—	—

* Receipts are calculated @ 1s. 6d. to the rupee